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REPORT

OF THE

SELECT STANDING COMMITTEE

ON

AGRICULTURE AND COLONIZATION

FIRST SESSION, ELEVENTH PARLIAMENT

1909

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1909

[App. No. 2—1909.]

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THE COMMITTEE.

(M. S. SCHELL, Esq., *Chairman.*)

Messieurs :

| | | |
|----------------------------------|-----------------------------------|----------------------------------|
| Armstrong, | Herron, | Oliver, |
| Arthurs, | Hodgins, | Owen, |
| Barr, | Hughes, | Paquet, |
| Beauparlant, | Hunt, | Parent, |
| Béland, | Jameson, | Pickup, |
| Black, | King, | Proulx, |
| Blain, | Lake, | Rankin, |
| Blondin | Lalor, | Richards, |
| Boyer, | Lanctot | Robb, |
| Bradbury, | (<i>Laprairie-Napierville</i>), | Roche, |
| Broder, | Lavergne | Ross, |
| Brown, | LeBlanc, | Rutan, |
| Burrell, | Lennox, | Savoie, |
| Calvert, | Lewis, | Schaffner, |
| Campbell, | Lortie, | Schell, |
| Carrier, | Lovell, | Sealey, |
| Carvell, | Low, | Seguin, |
| Cash, | Macdonald, | Sexsmith, |
| Champagne, | MacNutt, | Sharpe (<i>Lisgar</i>), |
| Chew, | McAllister, | Sharpe (<i>Ontario</i>), |
| Chisholm (<i>Antigonish</i>), | McCall, | Sinclair, |
| Chisholm (<i>Huron</i>), | McCarthy, | Smith (<i>Middlesex</i>), |
| Chisholm (<i>Inverness</i>), | McCoig, | Smith (<i>Stormont</i>), |
| Clare, | McColl, | Smith (<i>Nanaimo</i>), |
| Clark (<i>Red Deer</i>), | McIntyre (<i>Perth</i>), | Smyth, |
| Conmee, | McIntyre (<i>Strathcona</i>), | Sproule, |
| Currie (<i>Prince Edward</i>), | McLean (<i>Huron</i>), | Stanfield, |
| Currie (<i>Simcoe</i>), | McMillan, | Staples, |
| Delisle, | Madden, | Stewart, |
| Devlin, | Magrath, | Talbot, |
| Donnelly, | Major, | Thorton, |
| Dugas, | Marcile (<i>Bagot</i>), | Tobin, |
| Ecrément, | Marshall, | Todd, |
| Edwards, - | Martin (<i>St. Mary's</i>), | Tolmie, |
| Elson, | Martin (<i>Wellington</i>), | Turcotte (<i>Nicolet</i>), |
| Ethier, | Mayrand, | Turgeon, |
| Fisher, | Meighen, | Turriff, |
| Fraser, | Meigs, | Verville, |
| Gauvreau, | Middleboro, | Wallace, |
| Girard, | Miller, | White (<i>Renfrew</i>), |
| Gordon (<i>Kent</i>), | Molloy, | Wilson (<i>Laval</i>), |
| Gordon (<i>Nipissing</i>), | Monk, | Wilson |
| Harris, | Nantel, | (<i>Lennox and Addington</i>), |
| Henderson, | Neely, | Wright, |

REPORT

The Select Standing Committee on Agriculture and Colonization present their Fifth Report, as follows:—

Your Committee have had under consideration during the current Session of Parliament the subjects of Agriculture and Immigration, respectively, and appended hereto as an essential portion of this report, is the evidence presented to them upon each of these divisions of investigation.

M. S. SCHELL,

Chairman.

HOUSE OF COMMONS,
April 30, 1909.

THE EXPERIMENTAL FARM SYSTEM

HOUSE OF COMMONS,

COMMITTEE ROOM No. 62

WEDNESDAY, February 17, 1909.

The Select Standing Committee on Agriculture and Colonization met here this day at 11 o'clock, Mr. Malcolm S. Schell, Chairman, presiding.

The CHAIRMAN.—As you have noticed by the circular that was issued, we are to have an address to-day from Dr. Wm. Saunders, Director of Experimental Farms. He is one of the patriots of our country who has, by his investigations and practical work, caused two blades of grass to appear where formerly only one grew. Information similar to that which he is to give to the Committee will, I hope, be furnished in other practical and useful lines to our advantage and that of the country at large. I have very much pleasure in calling upon Dr. Saunders to address the committee.

Dr. WM. SAUNDERS, C.M.G.—Mr. Chairman and gentlemen. It gives me very great pleasure to be privileged again to appear before the Committee on Agriculture and Colonization to render some account of my stewardship with regard to the work of the experimental farms. In doing this I have taken the liberty, as the subject is such a wide one and a person is so apt to ramble from the text, to write out part of what I have to say, so that I might be sure that nothing I wanted to present to you this morning of very great importance would be omitted. For many reasons I prefer to speak extempore, but on an occasion like this I am sure I shall do more justice to you and the subject by adopting the other course.

ESTABLISHMENT OF THE DOMINION EXPERIMENTAL FARM SYSTEM.

The Dominion Experimental Farm System was organized in 1886, and was the outcome of the report of a Select Committee of the House of Commons appointed in 1884, to inquire into the best methods of encouraging and developing the interests of agriculture in Canada. This committee made a careful inquiry into the subject and took evidence from many persons having experience or scientific knowledge bearing on this important industry. They found agriculture in a very low condition in Canada and a deplorable want of knowledge among farmers in almost every branch of their work, and they recommended that the government establish an experimental farm, or farms, where experiments might be carried on in all branches of agriculture and horticulture, and that the results of this work be published from time to time and distributed freely among the farmers of the Dominion for their information. During 1885 the Honourable (now Sir John) Carling, then Minister of Agriculture for the Dominion, instituted measures for the gathering of further information regarding experimental farms and stations then in operation in Europe and America; and the methods pursued by them to obtain information valuable and helpful to farmers were noted. The Experimental Farms Act was passed in February, 1886, and I had the honour of being appointed director of these farms in October of the same year. The Act provided for the establishment of a central farm and four branch farms. The central farm was subsequently located near the capital, here, and was intended to serve the purposes of the two larger provinces of Ontario and Quebec. Of the branch farms, one was located at Nappan, Nova Scotia, to serve the purposes of the Maritime

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Provinces; one in Manitoba at Brandon; a farm for the Northwest Territories was placed at Indian Head, Saskatchewan; and that for British Columbia at Agassiz, in the coast climate of that province. In choosing the sites for these farms it was desired that they should be fairly representative of the larger settled areas in the provinces in which they were placed, and in the arrangement of the work the experiments first undertaken were such as were most likely to benefit the larger number of settlers in each case. Twenty-three years have passed since this work was begun and during that time Canada has made wonderful progress in agricultural development and a vast improvement has taken place in the condition of farmers all over the country.

Before the experimental farms were established there was no place where farmers could apply for information to aid them in the solution of the many difficult problems which they met with from time to time in connection with their work. With the advent of the experimental farm system these institutions became bureaus of information to every farmer. The record of the correspondence conducted with farmers all over the Dominion since their establishment tells its own story. The first two years were occupied in the organizing of these institutions but in 1889, the first year after the farms had become fairly established, the number of letters received was about 8,000 in all. Within five years they had increased to 25,000 a year, and during the ten years from 1898 to 1907 inclusive, the average number of letters received annually has been 72,619, and the average number of bulletins sent out each year has been 301,425. Thus a steady flow of information has been constantly going to Canadian farmers from the experimental farms ever since their establishment.

The experimental work which has been done at all the experimental farms since their organization covers a large field. Much research work has been undertaken along almost every line bearing on agriculture, and a great mass of important facts have been given every year to the farming community in reports and bulletins. Thus the work has been educative and under its influence farmers have become wiser and have risen in the scale of intelligence to such a degree that there is probably no country in the world where the average working farmers are so generally well informed in regard to the practical points in connection with their work as they are in Canada.

The underlying principles which led to the crowning of the farmer's efforts with success have been constantly and consistently advocated. These may be expressed briefly as follows: maintaining the fertility of the soil, following the best methods of preparing the land, adopting a judicious system of rotation, using the best and most productive varieties, the selection of plump and well ripened seed, and sowing early. These are the cardinal points in the doctrines we have been teaching for more than twenty years.

BARN-YARD MANURE AS A FERTILIZER.

In the efforts to maintain the fertility of the soil on farms in the Eastern provinces, barn-yard manure plays an important part. Experiments carried on for 20 years in succession with all the more important farm crops, have demonstrated the value of barn-yard manure and have shown that a given weight of manure taken fresh from the barn-yard is equal in crop producing power to the same weight of rotted manure, while the fresh manure loses during the process of rotting from 50 to 60 per cent of its weight. Economy in the use of barn-yard manure is of the utmost importance in connection with successful farming in this country, and the fact that it is estimated that the solid and liquid excreta of animals in Canada amounts to about 100,000,000 tons per annum indicates what enormous losses must result from a wasteful handling of such a large quantity of valuable fertilizing material. The results obtained from experiments with artificial fertilizers have not been so satisfactory as from those with barnyard manure. They have been carried on for a long period of years so that the conclusions drawn from them may be said to be very safe. The best results obtained from artificial manures have been had when they have been associated with barnyard manure. One reason why artificial manures used alone do not produce

APPENDIX No. 2

the effect on crops which might be expected from the large proportion of available plant food they convey to the soil is that they contain no humus and the proportion of vegetable matter in the soil having been reduced by frequent cropping, its capacity for holding moisture is lessened and thus its crop producing power is reduced.

The ploughing under of clover has also been most effective in increasing the store of plant food in the soil. The beneficial effect of this treatment has been manifest by increased crops. A clover sod supplies the soil with a large addition of humus whereby the land is made more retentive of moisture and the soil deepened and mellowed.

In the preparation of land for crop in the eastern provinces, fall ploughing is now generally followed, as the seed can thus be sown earlier in the spring. In the north-west it has been found an advantage to summer fallow a portion of the land under cultivation each year. This practice conserves the moisture, destroys weeds and brings the farmer larger crops. More attention is paid now than formerly to the systematic rotation of crops. This method economizes the use of the plant food in the soil; since different crops take the elements of fertility in different proportions, the rotation helps to maintain a balance. A four years' rotation is perhaps the most followed. This is begun with a hoed crop, which is well manured; clover and timothy are sown with the grain the second year, a crop of hay is taken off the third year, and the fourth year the field is used as pasture and during the following winter manure is spread on the sod and this is turned under in the spring in time to begin the course again with a hoed crop.

ADVANTAGES OF EARLY SOWING.

Experiments with early, medium and late sowings were carried on for ten years on plots of one-tenth of an acre each. The soil was very uniform in character. Sowings were made each season, the first at the earliest time practicable, the second at the end of a week and others at the end of each subsequent week until six successive sowings had been made. The plots were all harvested and threshed separately. The best crops were had from the second sowings, made just one week after it was possible to get on the land: beyond this, delay resulted in loss, which increased in proportion to the delay. The average of the ten years' experiments showed that with spring wheat a delay of one week after the period named entailed a loss of 30 per cent, two weeks 40 per cent, three weeks 50 per cent, and four weeks 56 per cent of the crop. With oats a delay of one week caused an average loss of over 15 per cent, two weeks 27 per cent, three weeks 32 per cent, and four weeks 48 per cent.

In the case of barley a delay of one week resulted in a loss of 23 per cent, two weeks 27 per cent, three weeks 40 per cent, and four weeks 46 per cent.

With peas a delay of one week caused an average loss of 4 per cent, two weeks 12 per cent, three weeks 22 per cent, and four weeks 30 per cent. Thus the early sowing of grain has been shown to be highly profitable to the farmer.

SELECTING THE BEST AND MOST PRODUCTIVE VARIETIES OF GRAIN.

Experiments have shown that it is profitable for farmers to select those varieties of grain for sowing which are most productive, of highest quality and early in maturing. In our work we have endeavoured to introduce or to produce varieties which combine these good qualities in the highest degree, and we have been very successful in this undertaking. The importance of this work is manifest when we consider the very large areas under grain crops in Canada. An increase of a single bushel per acre in the oat crop alone would add to the annual profits of Canadian farmers nearly \$2,000,000. The question may be asked, 'How can farmers procure these prolific strains of seeds?' The following is the method pursued to supply this need at the experimental farm. After careful and continued experiments have shown that a certain variety of grain is specially productive and promising this is cultivated in large fields so as to admit of the free distribution of samples among the farmers of the Dominion. The grain

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for this purpose is grown chiefly at the branch experimental farms in the Canadian Northwest from whence it is sent to Ottawa for distribution. The samples are sent out by mail in strong cotton bags containing, in the case of wheat and barley, five pounds each, and of oats four pounds, sufficient in each case for one-twentieth of an acre. The samples of peas, Indian corn and potatoes weigh three pounds each. These samples are sent only on personal application and only one variety can be had by each applicant each year. This enables us to cover a very wide area of ground; as the distribution each year amounts generally to over 40,000 samples, one can readily see what an influence the distribution of that large quantity of superior seed amongst the farmers all over the Dominion must have. The interest manifested in this distribution is increasing and the general introduction of these high class farm products into all parts of the country has resulted in improved quality and increased quantity of the crops grown both for export and for home consumption. The grain sent out is not only of high quality, but is thoroughly clean. I have a sample of Red Fife here such as we have been distributing this year, which I will hand to the members of the committee for their personal inspection. If a farmer takes reasonable care of the sample he received he can soon have sufficient clean and high grade seed to sow a large area for himself and have a surplus to sell to his neighbours.

It is remarkable how rapidly a supply of grain can be built up from a single four or five pound sample. Take for example, a four pound sample of oats; this with reasonable care and attention will usually produce about four bushels. This sown the next season on two acres of land should produce at least 100 bushels. With fifty acres seeded the third year the crop available at the close of that season should be about 2,500. The critical point in these tests—and I want to make this emphatic—is the threshing of the grain at the end of the first season; when there would be only about four bushels to handle, as it is here that many farmers fail to get the full advantage open to them. The product which the four pound sample has given is frequently threshed with a large machine, which it is difficult to get thoroughly clean, and in this way the grain becomes mixed with other and inferior varieties and is practically ruined. This crop should always be threshed by hand, when a year later the farmer handles a much larger crop a little waste in threshing is not of so much importance and he can throw away the first portion that comes through the machine, and thus make sure of having a fairly clean crop of seed for sowing the next season.

DISTRIBUTION OF SEED FROM CENTRAL EXPERIMENTAL FARM.

Speaking of the distribution of samples of grain, we are just now in the midst of that work. We are obliged to set a time at which the receipt of applications for samples must close, and we have fixed the date at the 15th of February, in order that we may get out all the samples asked for by the time seeding begins. Up to this morning we had sent out through the mail to farmers in Ontario 2,028 samples; Quebec, 2,799; Nova Scotia, 1,049; New Brunswick, 1,026; Prince Edward Island, 414; Manitoba, 997; Saskatchewan, 2,467; Alberta, 1,331; British Columbia, 107; 12,218 samples up to date. We shall probably have about thirty thousand applications yet to be filled which will bring the distribution up to about 40,000 by the time it is finished.

By Mr. Broder:

Q. Is that for wheat alone, or does it cover different samples?

A. It includes all the samples we distribute—wheat, oats, barley, some pease, but very many, Indian corn and potatoes.

Q. The whole thing?

A. That includes the whole series.

APPENDIX No. 2

By Mr. Blain:

Q. Where is the wheat grown??

A. As I have already mentioned, it is grown chiefly on the experimental farms in the Northwest, where we have a good deal of land. We received this year two good sized carloads from Indian Head and a carload from Brandon, and that with the amount we can supply from Ottawa makes up the quantity. Another reason why we prefer to get the grain from the Northwest provinces is because the individual yields of grain there are much larger. At Brandon last year our wheat averaged 39 bushels 45 lbs., oats 102 bushels, 27 lbs. per acre, and barley 52 bushels 4 lbs. That is the average of a number of different varieties.

By Mr. Sproule:

Q. That is from a large acreage, not from the small plots?

A. These figures are from the plots. The large acreage yields are not yet available; they will come a little later. But there is not usually very much difference. On these farms the plots are summer fallowed land and the fields where we grow the grain for distribution are also summer fallowed.

VARIETIES OF WHEAT GIVING LOWEST YIELDS.

By Mr. Staples:

Q. What varieties give the best yields?

A. Of wheat?

Q. Yes?

A. We publish all these particulars in the Crop Bulletin. It is a little later this year coming out than usual. I have just obtained the page proofs from the printer and have them with me. The bulletin will be out in a few days.

Q. Well what varieties give the largest yields?

A. At Indian Head the White Fife gave the largest, 39 bushels 40 lbs. per acre and Huron, Stanley and Preston came next. Red Fife came seventh in that list. In Brandon the relative position of these varieties was a little changed, but there was not very much difference between them. Preston was at the top of the list in Brandon, with 42 bushels 18 lbs., and Red Fife came next with 41 bushels 30 lbs. The average there was 39 bushels 45 lbs. of the 14 different varieties grown. The average at Indian Head of the same 14 varieties was 39 bushels 21 lbs., so you see there was not very much difference. In both cases the crops were exceedingly good.

Q. Have you tried any of the Velvet Chaff?

A. Do you mean the winter wheat known under that name?

Q. No, it is a spring wheat—Velvet Chaff spring wheat. It is very successful in certain districts in Manitoba: the yield has been better and the quality good?

A. We tried that for several years under the name of Blue Stem, and gave it up chiefly on account of the grain ripening later than Red Fife.

Q. It is just a little slower in ripening, but the yield has been better. That was in one or two years on certain lands of a light character?

A. We have not for some years past encouraged the growth of any variety that is at all later than Red Fife. Late ripening sorts are so often caught by autumn frosts that it would be most unwise to recommend them.

By Mr. Schaffner:

Q. Do you find it wise to depart from the Red Fife in the west?

A. We have done more to keep up the purity and general growth of Red Fife, in connection with our experiments, than of any other grain we have advocated. We have sent out this spring nearly a thousand samples to farmers who want to renew their seed. But Red Fife is not perfect, it is a little late. In some districts you can be almost sure of your crop every year. In all such districts we advise the farmers to

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sow Red Fife. But where they are pretty sure of having their grain more or less injured, perhaps one season out of two, we explain to the farmers what the differences are in the quality of the wheats we send out as compared with Red Fife, and leave it to them to follow their own judgment. We do not send out any poor wheats.

Q. The tendency, I think, in Northern Manitoba and Saskatchewan is to try and get a wheat that will ripen early. There is a member of the House, a very experienced miller, who told me it was a mistake, that the Red Fife is the wheat?

A. The experience of one man is often different from that of another. We often get letters saying 'I have been here three or four years and have had three crops out of four of Red Fife injured, can you not send us something that will ripen earlier?' We try and help such men by sending them some sort that is almost, if not quite, as good, and earlier in ripening.

Q. And when the frost comes as it did in 1906 early in August, we have not yet got any wheat that will be early enough?

A. Well, the returns we had from some of the earlier varieties were exceedingly interesting at that time. They showed that Red Fife in some instances would not grade at all. The earlier varieties were so much further advanced that although they graded low, still they brought considerably more money than could be got for Red Fife. This is a very complicated subject. We are just as keen and careful as any millers, or any other body of men, to preserve the character and quality of our grain uninjured in the eyes of foreign purchasers, and we are not distributing anything that will materially interfere with that. We have selection and cross-bred sorts where the quality is nearly or quite equal to Red Fife. Among these is an improved Red Fife quite equal to ordinary Red Fife and ripens several days earlier. I have here another wheat one of our cross-bred which was grown at Lesser Slave Lake, and weighs 65 lbs. to the bushel. In that respect it is superior to Red Fife, but is not quite so strong. This is a white skinned wheat and that is a great disadvantage under our present law regulating the grading of wheat; white skinned sorts do not usually bring the same price as red skinned sorts even though they be better wheat.

Q. Have you any Yukon wheat?

A. No, but there are samples of wheat from the Peace River here. I have here a sample of Riga wheat from Fort Vermilion weighing 64½ lbs. to the bushel. Now that Riga wheat is just about as good as Red Fife.

By Mr. Staples:

Q. How does the yield of the Riga wheat compare with that of the Red Fife?

A. When grown under condition favourable to Red Fife the crop of that variety is usually heavier than Riga. I could not get a sample of Red Fife from Fort Vermilion as the farmers there grow only earlier ripening sorts. The average yield of wheat for the Fort Vermilion district in 1908 is placed at 24 bushels to the acre. At Indian Head Riga wheat gave 28 bushels 53 lbs. per acre last year, between 5 and 6 bushels less per acre than Red Fife. Ladoga wheat does not hold its place in shipping to foreign countries; I do not think that any shipments have been made for many years, but it holds its place in communities where they grow it for their own use, for instance it is almost the only variety grown in the Peace River country, where the Hudson Bay Company buys all the wheat grown and grinds it into flour to supply the more northern posts. There is a slight difference in the shade of colour in the flour and in the strength of the wheat, but it does not cost so much and it saves them the expensive haul from Edmonton up to the Peace River, and it makes very good bread.

By Mr. Herron:

Q. How do you find the qualities of Alberta Red in comparison with Red Fife?

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A. We are investigating that at the present time. I think it is a mistake to call that 'Alberta Red'; according to the Act any red wheat grown in Alberta is entitled to be called 'Alberta Red,' we call that wheat 'Turkey Red.'

Q. What do you call it? 'Turkey Red'?

A. This wheat originally came from Europe and when it was brought out it was known as 'Turkey Red'; it was taken to Kansas and when it was grown there it was called 'Kansas Red' and when the Alberta people got it from Kansas they called it 'Alberta Red,' so that the name has been changed around according to the locality in which it was grown. I have a good sample of it here grown during the past season at Lacombe.

Q. That is the name given it by the people?

A. I know that Mr. Herron's statement is quite correct, but according to the regulations concerning the grading of wheat, any red wheat grown in Alberta is 'Alberta Red,' using this term for a class; therefore we do not want to apply this name to an individual variety of wheat, because it is confusing. It is better to let that name stand for red wheat grown in Alberta as a general term, there are other varieties besides 'Turkey Red'; we have grown ten varieties this year at Lethbridge and they have averaged over 40 bushels to the acre.

By Mr. Staples:

Q. Was this sample of wheat you have passed around for the inspection of the members grown in Lacombe this year?

A. Yes.

By Mr. McCoig:

Q. Are all these samples you have produced for inspection wheat grown in 1908?

A. Yes

Q. Is the 15th of February the last day upon which applications will be received for seed samples?

A. The 15th of February is the day fixed.

Q. And any applications received subsequent to that date would not be considered, is that what I understand?

A. I would not like to speak so decidedly as that, I would not like to say that we would not consider an application from a member because it was a day or two late. If a member sent in a list of a half dozen or a dozen names of farmers in his constituency who had written him for a sample of seed, even though the list actually came a day or two too late we do not usually enforce this rule so harshly as not to consider them when they come to us through members of the House of Commons.

By Mr. Blain:

Q. Is wheat grown at the Indian Head station suitable for distribution as seed for sowing in every other province in Canada?

A. Yes, I think so. We have never found any drawback in growing grain received from any of our experimental farms in this northwestern part of the country; our experience does not lead us to suppose that the fact that it has been grown there lessens its value in any way.

By Senator Perley:

Q. The Northwest wheat is all right to use for seed anywhere?

A. I think where a variety of grain produces a very high yield such as oats, which give from 80 to 100 bushels per acre, that it is better to take seed and distribute it among farmers than it would to buy seed from Ontario where the crop is

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probably only from 40 to 50 bushels to the acre, I think the grain gets the impress from its surroundings when it is brought up to that high yield and that it carries that impress with it to a certain extent, and produces a better yield in those parts of the country to which it is distributed.

By Mr. Blain:

Q. We hear a great deal sometimes about the excellence of the quality of wheat grown in the Northwest, and it is sometimes said that we cannot produce in Ontario as good wheat, or wheat that will produce as good flour as that which is grown in the Northwest. What I would like to ask is whether the wheat grown at Indian Head that you distribute among the farmers of Ontario will do as well in Ontario on account of different climatic conditions?

A. There is a good deal of optimism and enthusiasm among the people of the Northwest, and it is well that it is so, because they have a good many obstacles to get over, but that statement that good wheat can only be grown up there is not entirely true. While as a rule it is better in quality when grown in the Northwest than when grown in the east, we find, however, in Ottawa that we can grow wheat fully as good in quality, and of as great strength, as can be grown anywhere, in fact, the very best wheat we have ever worked in our baking tests, so our Cerealist tells me, was grown in Ottawa.

Q. Is the average wheat crop per acre larger in Western Canada than in Ontario?

A. If you put spring wheat and winter wheat grown in Ontario together and average them, I think the yield per acre in Ontario would be slightly larger. In Ontario the winter wheat last year gave 23%₁₀ bushels per acre and the spring wheat 15%₁₀ bushels per acre, showing that winter wheat gave much the better crop. If the yields of winter and spring wheat are added together the average is over 19 bushels, but in quality it would not be equal to the flour made from the Northwestern hard wheat, because the varieties grown are different. There are also climatic and other conditions which are favourable for the production of strength in wheat grown in the Northwest.

By Mr. Schaffner:

Q. That is just as good an average as we get in the West?

Mr. STAPLES.—Well, it is a good average; however, we need not discuss that matter now. What was the average yield in 1908?

A. The average yield of wheat in Manitoba was 17 bushels and for Saskatchewan 14.50, that is unusually low, and for Alberta 29.17 for winter wheat and 22.60 for spring.

Q. And what is it for Ontario?

A. For Ontario it is 23%₁₀ for winter and 15%₁₀ for spring.

By Mr. Schaffner:

Q. That is better than the Northwest?

A. Taking ten years you will find the average better for the Northwest, it will run about 19 bushels.

By Mr. Sexsmith:

Q. How has the Red Fife wheat shown in Ontario in the last ten years?

A. I can give you the last five years at Ottawa at the Experimental Farm. There are difficulties in answering questions like this in a general way. Some farmers have no doubt grown other varieties than Red Fife under the name of Red Fife, they are not always particular enough about the seed they sow and sometimes it is mixed, and I do

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not like to base an opinion on the quality or yield of any variety on the statements made in the press in reference to the average yield; but where we grow it ourselves we know what we are growing, and knowing that we are enabled to say that our records in reference to the matter are reliable. At Ottawa the average of the Red Fife wheat for the past five years has been 25 bushels, 15 lbs. per acre, and that is above the average of other sorts. Red Fife is a good yielder if it is kept pure, but there are other poorer yielding varieties sometimes mixed with it, more or less bearded wheat, and in some places you will find the bearded heads in the field almost as plentiful as the beardless ones, and of course such wheat cannot be fairly considered as comparable with the pure Red Fife.

By Mr. Owen:

Q. Which of these wheats produces the best flour?

A. I am afraid I shall have to refer you to the cerealist who does all the testing of flour for an answer to that question. He is learning fresh facts every day from the baking tests he is making with the flour of a number of varieties of wheat. Of course Red Fife always turns out a good loaf, if it is a pure sample, and some of the other varieties turn out loaves which are very little inferior. Some again are decidedly poorer. Then the question of individual taste comes in. The popular taste as to the colour and character which the best wheat should have varies in different countries. The grading of wheat is so arranged in Canada that we do not encourage white-skinned varieties. In Australia the white-skinned sorts are preferred. In England a flour that will give a fairly moist loaf is preferred. In this country the preference is often given to a flour that gives us a drier loaf. The English millers want enough of our strong wheat to mix with the weaker English wheats to bring the flour up to the strength that suits their people. We seem to prefer that strength in our flour which produces bread somewhat dry and tough. That often arises from our making bread from flour from Red Fife wheat alone, which is tough in its nature and when the bread rises the divisions which form the little interstices in the loaf are sometimes designated as rubbery or tough.

Mr. SPROULE.—Spongy.

Dr. SAUNDERS.—Some bakers in this country do not use flour as strong as that. They mix some softer flour with it, such as winter wheat flour, in order to give the bread a more friable and pleasant character in the mouth.

By Mr. Staples:

Q. In your opinion there is too much consideration given to colour in our grading law?

A. There seems to be too strong a preference for red-skinned sorts. Take Red Fife wheat grown on scrub land and you will often find it piebald in colour.

Q. Yes.

A. That is through an increase in the quantity of starch in the kernel. That wheat is not as good as the translucent Red Fife, it is not as strong and will not grade as high; but often the buyer makes no distinction between the light-coloured piebald Red Fife and the white-skinned White Fife, classing them both as inferior. Now, White Fife is equally as good in our experience in every way as Red Fife, but unless it will grade No. 1 hard there is no provision made for giving it any grade at all. It is assigned a low grade because it is white-skinned. For this reason there is not much White Fife grown.

By Mr. Schaffner:

Q. White Fife does not ripen any earlier?

A. White Fife ripens at about the same time. In some localities it is said to produce larger crops; in other localities people say the reverse. Like all other

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varieties of wheat it gives a varying crop, depending more upon the preparation the land has had, the condition it is in and the character of the season than anything else. Both the Red Fife and the White Fife are excellent varieties, heavy croppers and practically identical in quality. They are, however, both rather late in ripening.

By Mr. Robb:

Q. Do you consider the sample of wheat grown at Lesser Slave Lake thoroughly ripened?

A. Yes, I think it is. There is a Roman Catholic mission at the head of Lesser Slave Lake and this wheat was grown on that mission farm. A 3-lb sample was sent there from the Experimental Farm some years ago, and the father who has charge of the farm, visited Ottawa early this winter and brought this sample with him. He said they had some 50 or 60 bags now and he regards it as a splendid wheat for their district. The fact of its weighing 65 lbs. to the bushel shows that it is a good solid wheat. It seems to be quite ripe. It has been kept in a glass bottle for several weeks and would, I think, be musty now if it had not been fully ripe.

By Mr. Rankin:

Q. In recent years spring wheat does not seem to have done as well in Ontario as it did years ago. How do you explain that?

A. I do not know and I doubt if the opinion is well founded, as such statements are not always the outcome of careful investigations. In the crop statistics published by the province of Ontario the average yield of spring wheat for the past 25 years is given as 15 $\frac{1}{10}$ bushels per acre, whereas the crop for the past five years has averaged 17.2 bushels per acre. No proof of any falling off in yield can be had from these statistics. There is no doubt that winter wheat on the average produces a much larger crop than spring wheat.

By Mr. Chisholm (Huron):

Q. Have you tried Turkey Red at Indian Head?

A. Yes, but we have not been able to grow winter wheats at Indian Head to any advantage. We grew Turkey Red last year, just sufficient to give us an experience contrary to what they have had in the Lethbridge district, where it is grown quite successfully.

Q. What time did you sow it?

A. I was coming to that. In Lethbridge they say it must be sown in August to get the best results. Mr. MacKay had three small fields, he sowed one on August 8, a second on September 7, and the third on September 18. The first two sown covered the ground fairly well, and that last sown was showing in the rows when winter set in. The early sown plots were both badly winter killed and the returns were small, but the third seeding was not injured to any extent, and the yield was at the rate of 29 bushels 10 lbs. per acre. Thus the experience at Indian Head was different from what was held at Lethbridge. In regard to our crops last year at Lethbridge, I will give you the results of the experience there with crops grown on irrigated land, and on land without irrigation. We have facilities for conducting both these methods of crop growing on the Experimental Farm there. With winter wheat, however, we have not used irrigation because enough moisture usually falls there to ripen crops of winter wheat. The 10 varieties that were tried this year have averaged 40 bushels 20 lbs per acre.

EXTENSION OF THE EXPERIMENTAL FARM SYSTEM.

In my remarks on the experimental farms of the Dominion I have only as yet referred to the establishment of the first five farms provided for in the Experimental Farms Act of 1887. Since the formation of the two great provinces of Saskatchewan

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and Alberta, two additional experimental farms have been located in Alberta. One of these is at Lethbridge, comprising 400 acres of land, 100 acres of which is under irrigation while the other 300 acres offers favourable conditions for experiments in dry farming. The other farm has been placed at Lacombe and comprises about 150 acres. A site has also been chosen for a new farm for Northern Saskatchewan at Rosthern. This latter is now being organized and it is expected that work will begin on that farm early in the coming season.

Arrangements have also been made for carrying on during 1909, a number of important agricultural experiments at Fort Vermilion on the Peace river, Alberta, also at Kamloops, B.C. I will now give you some particulars concerning the crops grown on irrigated land at Lethbridge.

RESULTS OBTAINED FROM IRRIGATED AND NON-IRRIGATED LANDS.

The spring wheat on irrigated land gave an average of 37 bushels 20 lbs. per acre, not very far behind the winter wheats, but on non-irrigated land they did not do as well: here the yield was 29 bushels 32 lbs. per acre.

With oats on the land without irrigation the average crop was 65 bushels 23 lbs., the average under irrigation was 65 bushels 26 lbs., a difference of only 3 lbs. on the average for all the varieties tested. The results from the growing of barleys were much the same. On the non-irrigated plots the average from all the plots was 38 bushels 36 lbs. on irrigated land 38 bushels 44 lbs. A word of explanation regarding the irrigated plots is due here. Owing to a very bad storm the irrigation ditch was so injured in June that water could not be furnished to the crops as early as it was needed, and these crops were only irrigated once, that was in July, and with some of them the water probably came too late to give them the full benefit they would otherwise have had from irrigation. Hence we must not draw conclusions from this one series of tests, because the grain did not get quite a fair chance as far as the irrigated plots were concerned. A bulletin will shortly be issued containing particulars of these results, which are very interesting and they serve to show that while some crops on irrigated lands are much larger in that district, with judicious treatment the soil can be made to produce in most seasons very good crops of winter wheat and probably oats without irrigation.

CAMPBELL SYSTEM OF DRY FARMING.

By Mr. Herron:

Q. Is there anything done in that district regarding the dry farming system, has it been introduced?

A. Yes, the system we are following is practically the dry farming system when you do not irrigate.

Q. But I mean is the dry farming system introduced by—what is the name of that man who introduced it in that district?

A. The Campbell system is being followed to some extent at Lethbridge. As carried out in the drier districts of the United States this system may be briefly described as follows:—Only one crop is raised in two years. The land is ploughed deep in the spring to let the spring rains sink into the soil, and after almost every important shower or storm it is run over with a cultivator which just scratches the surface. A wide strip of the surface is cultivated at a time, just deep enough to break up the capillary formation which the soil will make when it is allowed to rest for a good while and which if left undistributed will bring the moisture from below up to the surface where it is lost by evaporation. This cultivating puts 'a dust blanket,' as they call it, on the land and the moisture is retained. That course of preparation is continued throughout the season, using the cultivator several times or after every

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heavy rain, and as the season advances the land is found to be stored with a good portion of the moisture which has come down in the rainfall during the earlier summer months. Then in August the winter wheat is sown—and sometimes winter rye. The accumulated moisture is carried over in the soil to serve the plants in their next season's growth and with the rainfall they will then get the crop will be covered to maturity. The variety of winter wheat known as 'Turkey Red,' or 'Alberta Red' seems to have that adaptation to the conditions in Southern Alberta which makes it more successful than any other variety that has been sown, and although the quality varies somewhat, on the whole it may be put very close to Red Fife. Some samples seem to be fully equal to Red Fife, and some again fall below it. Whether that difference is brought about by climatic variations in the different sections, or whether it is due to differences in the soil has not yet been determined.

I did not finish the figures of yields at Indian Head and Brandon, which I was giving you, from whence the grade for distribution has mainly come this year. I gave you the yield of wheat at Brandon, which was 39 bushels, 45 lbs.; oats, 102 bushels 27 lbs. and barley 52 bushels and 4 lbs. The yield of wheat at Indian Head was 39 bushels 21 lbs.; oats 80 bushels 24 lbs.; and barley 44 bushels 23 lbs., showing that the crops from which these seed samples of grain have been supplied were high in their character and yield, the grain being also pure and of very good quality.

By Mr. Schaffner:

Q. It seems to me that in order to render this information complete, you should tell us how that land was prepared.

A. On the western farms we invariably use summer-fallowed land for such crops as are intended for the seed distribution.

Q. Ploughed how many times in the season?

A. Summer-fallowed in the usual way, that is fallowed every third year.

Q. I mean before the crop is put in, is it just ploughed once?

METHOD OF SUMMER-FALLOWING AT INDIAN HEAD.

A. No, the plan adopted at Indian Head for summer-fallow is as follows:—The land is ploughed deep (7 to 8 inches) before the last of June, and the surface cultivated during the growing season to destroy weeds and retain moisture. The last cultivation usually leaves the land in good condition for sowing in the following spring without any further preparation. This practice has given the best results.

There are several different methods followed in preparing fallow land, some prefer to plough deep, while others prefer to plough shallow.

Q. Is barnyard manure applied to the crops?

A. We have never used barnyard manure on the grain, we have used it on roots; generally we use what barnyard manure we have on them.

Q. What is the difference between the two systems, summer-fallowing and dry farming?

A. Summer-fallowing is a system which gives the farmer two crops in three years, the third year the land lies fallow, while under the 'dry farming' system, you only get one crop in two years. Land prepared in the manner described is ready for seeding immediately the frost is out of the ground, and as I explained to you in the earlier part of my remarks sowing early always makes a great difference in the crops. The summer-fallow is a very thorough preparation of the land.

By Mr. Schaffner:

Q. I would like to ask one important question, do you 'pack' the land?

A. We have not used a packer at Indian Head; we are, however, getting one to experiment with next season.

Q. You cannot give us the result of any experiments with the packer?

A. Not at Indian Head; we did use a packer at Lacombe on some plots of oats. On three of these a packer was used and the other three were left unpacked. The

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plots on which the packer was used produced a stronger growth in each case and gave a heavier crop, the increase in yield varying from six to eighteen bushels per acre. It is proposed to try the packer more extensively next season.

Q. Would not the same results be obtained by just one ploughing and cultivating afterwards?

A. It would be unwise to offer any opinion on 'packing' from the results of this single experiment. I hope, however, if I am spared to come before you another year, to be able to give the results of further experiments with the packer at several of the Northwestern farms.

By Mr. Smith (North Middlesex):

Q. In your experiments with summer fallowing do you not find—if you have tried it, as I presume you have—that ploughing only once and then cultivating the surface, to have the soil clean, produces better results than ploughing as you say five or six inches deep, late in the season?

A. You must have misunderstood me. I did not refer to any late ploughing, because our superintendent at Indian Head, Mr. MacKay—whom I may say was the father of summer fallowing and the first man who ever summer fallowed in the Northwest—does not approve of late ploughing, which leaves the soil too loose and in such condition that it does not retain moisture well. He believes in ploughing once early in the season before the end of June from 7 to 8 inches deep and then cultivating twice, or if necessary three times later on, but twice is the usual practice. In some parts of Alberta and where the conditions of soil are somewhat different, the methods of summer fallowing are sometimes modified. Farmers can seldom have information given to them sufficiently accurate to do away with the necessity of using their own brains. They must supplement what they can learn from others with their own good common sense and be guided largely by the results of their own experience, because a difference in soil or a difference in climate may necessitate a difference in treatment. Such alterations in circumstances may often be set right by the use of one's own judgment. No one can lay down a hard and fast rule for the treatment of land throughout the Northwest which will work well in all cases.

By Mr. Broder:

Q. When we roll our soil here that increases the evaporation and the soil dries out all the more quickly. How is it that it acts differently in the Northwest? How is it they have to pack the soil in the Northwest to keep the moisture?

A. Packing and rolling are two different things. The rolling of the soil is done to bring the moisture to the surface so that it will have its effect on the seed and cause it to germinate more promptly.

Q. Yes, but the soil dries out more quickly?

A. Certainly it dries out more quickly and ought to be lightly cultivated after the seed has got the benefit of that moisture. A rolled surface ought not in a dry season to be left for any time smooth or unbroken. It should be scratched with a cultivator of some sort to break up the crust. In working with a packer the soil is pressed down firmly about the seed without leaving a smooth surface. The earth is packed down so as to get the advantage from the packing of the soil without the disadvantage from the smooth surface work of the roller. It leaves a thinly pulverized top layer called in the west a 'dust blanket.' That dries, but the soil just below is kept moist because there is no chance of the moisture finding its way out through this upper layer of loose soil.

By Mr. Sexsmith:

Q. There is a feeling in certain portions of Canada that the soil of the west will not continue to grow as good quality of milling wheat year after year, but that the

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milling quality of that wheat will deteriorate. My reason for drawing your attention to this is that in conversation with a gentleman representing one of the largest milling concerns in the Northwest, he informed me that they had to go into the new sections of country and get wheat from the virgin soil to mix with the wheat in the older portions of Manitoba in order to keep up the standard quality of their flour. I think it is well that the people should have some information with regard to that. Of course in the older sections of Canada we have to manure to keep up the quality of the soil, but in the Northwest I think there is no manuring done?

A. There is nothing known to the scientific world in support of that idea. If the soil becomes impoverished the quantity of wheat produced will be decreased but the quality, as far as we are able to judge from past experience, remains the same. There may be other reasons to account for the difference or depreciation of which you speak. In some sections of the country there is a good deal of mixed wheat grown, the Red Fife representing only a small proportion of the mixture. In such cases the quality of the product will be lowered in character, in proportion to the increase of the inferior sort. I feel convinced that no satisfactory evidence has been brought forward sufficient to establish the correctness of this statement.

Q. Then you contend that the hard wheat producing power of the west is just the same now as it was 50 years ago? There has been an impression abroad that the hard wheat producing country or belt is moving to the north. I saw an article which appeared in an agricultural journal a short time ago to the effect that it would ultimately reach Alaska.

Q. Now the northern states do not appear to produce the quality of wheat they did some years ago. They fear they are going to lose the hard producing quality altogether?

A. I have not had the opportunity of inspecting recently any wheats grown in the northwestern states, but where pure seed has been used I have never heard of any such deterioration. I was through parts of the Dakotas last year and I thought their methods of farming were very inferior. It would not have been a matter of surprise to have found deterioration there, due probably to the mixing of the seed and the poor farming.

By Mr. Chisholm (Huron):

Q. Do you not think that the fact of there being more sunlight in the northern districts is responsible for the better quality?

A. The increase in the number of hours of sunlight in the more northern districts has its effect in lessening the time required for the ripening of the grain, but this would not necessarily improve its quality.

Q. Does it not improve the quality of the grain?

A. That has not been shown. I know there is a popular opinion prevalent that the farther north you are able to grow wheat the better that wheat will be. I am bound to say, however, that I do not know of any scientific evidence in favour of this view.

By Mr. Sexsmith:

Q. According to the impressions created at the Ontario Agricultural College, Guelph, it does not appear that we are producing in Western Ontario now the quality of wheat which we might produce. According to the tests there, the wheat is softer than formerly and has not the same texture?

A. It is only within the last three or four years that practical tests have been applied to wheat to determine its quality by grinding and baking and this is too short a time to permit of reliable opinions being formed on such a complex subject. We have found that in Ottawa—in what I suppose you would call worn-out soils as com-

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pared with those of Manitoba or Saskatchewan—we can grow wheats just as good as we ever grew.

Q. How do you account for this that in the province of Ontario we can produce just as good a sample of wheat and of equal quality to that which was produced 25 years ago, and yet the millers cannot make the same quality of flour?

A. It is not the same varieties; the varieties apart from Red Fife have been completely changed during the last 25 years.

Q. This Red Fife variety was originated in the county which I happen to represent, by a man named Fife, and forty years ago some of them produced 50 bushels to the acre of that wheat and yet to-day they cannot produce nearly as much—in fact right in that township where that wheat was first produced the best farmers, whose farms are in good condition, would not expect more than 15 bushels to the acre of the same variety; in fact they have dispensed with growing it altogether.

A. That may arise from exhaustion in the soil of the material that the wheat plant more particularly needs in order to arrive at perfection.

Q. Well, they can produce 50 bushels to the acre of other wheat right in the same neighbourhood, on the same land, and the same farm that produced the first head of Red Fife in Canada?

A. It is certainly very difficult to reconcile these statements, but there are so many agricultural conundrums which nobody can answer satisfactorily that it is not always wise to express an opinion upon a difficult question unless one has all the facts before him.

By Mr. Smith (North Middlesex):

Q. It is really a fact that in some localities where formerly 30 or 40 bushels of Red Fife wheat have been produced the land would not now produce more than 15 bushels of that variety, and yet they will produce 30 bushels of other wheat?

A. This is said to be so, and one cannot dispute facts.

Q. It is, however, a fact that the first farm that produced Red Fife wheat in Canada cannot now produce Red Fife wheat anything like it did 35 years ago?

A. Has there been any recent proof of that fact?

Q. Yes, and some farmers up there have even sent to Manitoba and got seed of Red Fife variety and have tried to grow it and in their effort to re-acclimatize it have grown it for three years in succession, but they did not have any success.

A. I cannot see why any farmer who can grow 40 or 50 bushels of fall wheat should ever want to try to grow the smaller crops which spring wheat will give him.

Q. That is not the point. The point is, have conditions changed with respect to the growing of Red Fife, No. 1 hard wheat?

A. In respect to that all I can say is that our own experience at Ottawa has been, as I have told you, that we have grown Red Fife for the last ten or twelve years very successfully, and of excellent quality, and I do not see any reason why farmers elsewhere should not be able to do the same.

Q. About how much per acre do you grow of this Red Fife wheat at Ottawa?

A. I will give you the experience of the last five years. For the past five years Red Fife has given 25 bushels and 18 lbs. to the acre on the average on the trial plots on the Experimental Farm at Ottawa.

VALUE OF GRASSES GROWN IN THE NORTHWEST.

I desire to call attention to the fact that the grasses now under cultivation have become a very important item in agriculture in the Northwest.

BROME GRASS.

There is one of them in particular that has been more or less spoken against and written against for some time past, that is the Brome grass. The history of the in-

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roduction of Brome grass dates from 1887, when through the agency of experimental farms seed of that grass was brought from Russia. The first year it was introduced, samples were sent to the experimental farms in Manitoba and the Northwest Territories for trial and from the outset it succeeded remarkably well. That grass proved a wonderfully useful grass, it is a strong grower, is tenacious of life, and will do well in dry seasons or wet seasons. It is highly nutritive and produces a quality of hay which is palatable to all classes of stock. Having all this strength and vigour in its constitution it is not so easily disposed of when the farmer wants to plough it under. The seed also blows about more or less in that windy country and gets in among hedges of trees and plantations where it shoots up and makes a vigorous growth. Now in some localities there is a feeling that Brome grass is too troublesome a thing to grow, that it sprouts up everywhere and that it is difficult to get rid of when once it is well established. This is true to a certain extent, but by carefully ploughing under it can be disposed of. This grass is appreciated by many people for its good qualities, and I desire to call attention to the statistics of the crops for 1908 in the province of Manitoba to show the important position it occupies to-day. During the past year there have been 57,729 tons of Brome grass grown in Manitoba; 44,946 tons of western rye grass, another variety introduced by the experimental farms, and 91,000 tons of timothy. During one of my early visits to Manitoba about twenty years ago, I met a number of the leading farmers of the Brandon district at Brandon and the discussion ran on the subject of grasses. They said: 'If you can find for us any grass in any part of the world that will stand this climate so that we can have hay fields and pastures, you will do us the greatest imaginable good and we can then hope for an enlargement of the dairy industry; whereas as it is now we have to drive twenty to thirty miles for wild hay. We have not succeeded in growing timothy and to drive so far for native hay is too laborious and too expensive a thing to permit us to do much in the way of feeding stock or extending the dairy industry.' Since that time these grasses have been introduced, the Brome grass particularly to meet the difficulties referred to, and they have proved remarkably useful. The western rye grass was found growing well in the northwest and collected and cultivated and subsequently distributed by the experimental farms over the whole country. These grasses are now well established and are doing a good service, and large crops of hay are grown every year. It would be a pity to have any statements go unchallenged which would prejudice the minds of newcomers against so useful a product as Brome grass is. I would advise every farmer to give it a fair trial, for I believe that Brome grass is the most generally useful grass for Manitoba and the Northwest which we possess, and that it has laid the foundation for a very large dairy industry in connection with the western rye grass and timothy, and that its growth should be encouraged. I hope that farmers generally throughout the Northwest will give this valuable grass a fair showing, and if they do I feel persuaded they will find it to be a most useful fodder plant, one that will furnish an abundance of nutritious hay of the highest quality, which will carry their horses and cattle through the winter months in good condition.

By Mr. Herron:

Q. I agree with what Dr. Saunders states with respect to Brome grass. I have been growing it for the last seven or eight years and from my experience I can corroborate his statements.

A. I am glad to hear this testimony from one who has had such long experience. I suppose you find it to spring up to some extent here and there over the farm.

Q. It does to some extent?

A. If it did not possess such vigorous characteristics it would not be the useful thing it is.

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ALFALFA.

By Mr. Currie (North Simcoe):

Q. Is it not a fact that the United States Government have secured a species of alfalfa that will stand the climate of Manitoba and the Northwest, the Yellow Flowered alfalfa?

A. Yes, the United States Government have been doing a good work in sending men out to search for new and useful agricultural products in foreign lands. A variety of alfalfa was found in Turkestan which seems to be hardier than the common form. I have read of the yellow flowered variety referred to but have not seen it yet and have forgotten just where it was found.

Q. Siberia?

A. I had a visit a short time ago from one of these travelling agents of the United States who had recently come home from a two years' expedition to Northern China and who has since started for a two years' journey through Manchuria. The United States Department of Agriculture has been very generous in giving us samples of such products as their agents have found and in this way we first got the Turkestan alfalfa which in our experience is hardier than the ordinary alfalfa. At the Indian Head farm we have the Turkestan alfalfa and we have another variety that has proven hardy from Minnesota called the Grimm alfalfa. We have also tried alfalfa seed from Montana, from Utah and from other parts of the United States. We have had these different sorts growing side by side at Indian Head. I looked over them last year very carefully and found that the ordinary alfalfa seemed almost as good as any of them; there did not appear to be any very great differences, judging from the results of last year. Mr. MacKay has succeeded in raising some alfalfa seed at Indian Head, and I am hoping for good results in the way of hardiness from this source. Recently I have had a promise from Washington of some more samples of alfalfa to test in our more northern districts, and hope I may succeed in getting some of the yellow flowered variety referred to.

By Mr. Smith (North Middlesex):

Q. There are no varieties of alfalfa that you have succeeded in getting to withstand the winter in the west as yet?

A. Yes, not only these varieties of Grimm and Turkestan, but the common alfalfa, during the last three years, has stood very well at Indian Head. Before that the common alfalfa was often killed out. I don't know whether we have got into any better methods of handling it, or whether the seasons have been less severe.

By Mr. Currie (North Simcoe):

Q. Perhaps it has become acclimatised?

A. This is quite possible. Mr. MacKay wrote me the other day and said 'The alfalfa seems to have come to stay with us and we want to have enough seed this year for five acres.' This want will be supplied, as we desire to test the alfalfa on a larger scale than we have hitherto been doing. Our early plots were half acres and less, but five acres will make a more impressive experiment. The crops of alfalfa sown in 1905, gave, in 1907 with one cutting only, from 1 ton 650 lbs. to 3 tons 143 lbs. of cured hay per acre.

By Mr. Currie (North Simcoe):

Q. Can you not secure any seed at the Farm?

A. At Indian Head we ripened some seed last year and there is a little of that available for planting this year. Some of this Indian Head seed has also been sent to Brandon, so that we will have Indian Head alfalfa grown at both the farms in question this year for the first time.

By Mr. Sealey:

Q. What was the result of your observations of the killing? Was it on knolls or hills or in hollows?

A. At Indian Head the plots were grown in a level field. They seemed to be all subject to the same conditions, both the supposed hardy varieties and the ordinary alfalfa and none of them were badly winter killed.

By Mr. Herron:

Q. Has alfalfa been grown to any extent in any other province, say in Ontario?

A. Yes, we grow it here at the farm and it generally does very well, but it does not take that prominent place in agriculture that it does in the drier parts of the United States, where it is a crop ranking considerably above wheat in value. At Lethbridge we have succeeded very well with alfalfa. We have grown very heavy crops cutting two and three crops in a year. We also have some growing at Lacombe, Alberta. I hope we shall know more about the value of this crop in different parts of Canada in the course of two or three years.

By Mr. Currie (North Simcoe):

Q. Just one question about alfalfa. There is an impression prevalent amongst the farmers of the province of Ontario that it is a dangerous grass to plant, that it is impossible to get rid of it once it is sown. Now alfalfa is such a valuable fodder plant and it is used to such a large extent in the United States that it will be well to have your views on this subject so that the farming community in Ontario, where this plant will grow well, may understand its value as a food product?

A. It is one of the most valuable crops for improving the soil that can be grown and there is no difficulty whatever in getting rid of it. It forms a large body of root in the soil and the root is of a very nitrogenous, humus forming character so that it acts as a fertilizer to the land.

Q. Nourishes the soil?

A. Yes. It nourishes the soil, and after a few crops of alfalfa have been taken you can plough it under and get much better crops of grain than you could before.

By Mr. Herron:

Q. We have had difficulty in getting it to stay.

A. It pays, where it has taken well, to let it stay for several years, because the roots grow deeper and deeper and it helps to open the soil and to fertilize the land deep down where many other plants do not reach. In alfalfa districts in the United States where farmers can get a good catch of alfalfa, they think their soil is made for the time being and they are quite sure of good crops for some years after.

By Mr. Currie (North Simcoe):

Q. I have heard it suggested that the way to get a good catch of alfalfa was to take some soil from the field where there was a good catch, powder it dry, and mix it with the seed the same as lime or fertilizer, that is sometimes mixed with the seed?

A. Yes.

Q. Have you taken any action in that matter?

A. Yes, we have taken action in that connection to some extent. We have found this practice very beneficial in some cases. We offer to supply soil from our alfalfa fields at Lethbridge, Alberta, to any farmer who wants to try it for that purpose. We

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give to applicants from 100 to 200 pounds of soil, without charge, provided they are willing to pay the freight on it. We sent some from Lethbridge to Lacombe, Alberta, last year and I saw the plots in the autumn; there was a very marked difference in favour of the alfalfa planted with the soil sent from Lethbridge. The soil may be mixed with the seed and spread with it when sowing or scattered lightly over the ground after sowing.

By Mr. Smith (North Middlesex):

Q. That difference would not be so apparent in the case of a field in which clover of any other kind had been grown before?

A. I cannot say as to that, but the idea is that there are minute bacteria already present in most soils which are essential to the healthy growth of alfalfa. If these are not present they may be introduced in the manner stated, when they multiply rapidly. The bacteria which produces that strong growth in alfalfa is claimed to be different from the variety which promotes the growth of the red clover, but whether there is any marked difference or not in these bacteria I am not prepared to say. To carry out the experiment that has been suggested, the soil should be taken from a field where alfalfa has been successfully grown, as it is not likely the experiment would be successful if the earth were taken from a field where any other variety of clover had been grown.

By Mr. Currie (North Simcoe):

Q. But it will work when taken from a field in which alfalfa has been grown, and it will give a good crop?

A. Yes, and it generally improves the crop very much. The bacteria referred to may however exist in sufficient quantity already in the soil. In such case the addition of the earth from the alfalfa field would not be likely to produce any marked improvement in the crop.

METHOD OF DISTRIBUTING CENTRAL EXPERIMENTAL FARM PUBLICATIONS.

Dr. SAUNDERS.—I might mention for the information of some of the new members that our plan of distributing the publications of the experimental farms is a permanent one; that is the names of the applicants are placed on what is called the 'Permanent Mailing List, and all the general publications of the farm are sent to persons on that list. When a new issue comes out it is quite common to receive from members requests for from 100 to 300 copies or more of that bulletin; but are unable to meet such demands as we do not publish more than enough to supply those on the mailing list, and to meet the requests of new applicants. If a member wants to have more copies of the farm publications go to the farmers in his constituency, he should apply to the farm for a list of the names of those who are receiving the farm publications. Then if they want to add to that list 50 or 100 new names it is open for them to do so. These are put on the permanent list and the number of copies printed is always sufficient to supply those whose names are entered there.

By Mr. Sealey:

Q. I am glad to know about this general mailing list because it will prevent us repeating what you are perhaps already doing?

Dr. SAUNDERS.—Yes, we want to always avoid the duplicating of copies of our publications to one individual.

Mr. HODGINS.—To whom do we address our communications?

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Dr. SAUNDERS.—Address them to the Director and I will see that they are attended to. It takes a little time to make the list out, but in the course of a few days you could obtain the copy you desire, and you would be guided by that list as to any additional names you would send in.

Committee adjourned.

Having read over the foregoing transcript of my evidence I certify the same to be correct.

WM. SAUNDERS,
Director, Dominion Experimental Farms.

COMPOSITION OF FEEDING STUFFS ON THE CANADIAN MARKET.

HOUSE OF COMMONS,

COMMITTEE ROOM No. 62,

WEDNESDAY, March 3, 1909.

The Select Standing Committee on Agriculture and Colonization met this day at 11 o'clock, Mr. Schell, chairman, presiding.

The CHAIRMAN.—I have much pleasure in welcoming Professor Shutt, Chemist of the Dominion Experimental Farms, who will address the Committee on the topics set forth in the addenda paper which has been distributed to members.

Mr. SHUTT.—Mr. Chairman and gentlemen,—It is always a matter of some difficulty to select, from the work of the year, subjects for discussion at this Committee, for there is so much of importance and interest in that work that might be brought before you. As years go by our field of labour widens, our work increases, the investigations become more numerous and consequently this difficulty increases rather than diminishes. It seems to me, on thinking over the matter, that it would be well on this occasion, after indicating in a general way the character and scope of our chemical work, to devote this session more particularly, to the discussion of the feeding stuffs on the Canadian market—a subject which at the present time is one of considerable interest to the agricultural community.

Although your Chairman has been good enough to say I am to deliver an address, the fact is that I am rather to give evidence and testimony and, therefore, I shall not regard it as any interruption if you ask questions relative to the subject we are discussing. My purpose here is to answer questions and to give information and I shall be very pleased to do so to the best of my ability. Naturally, I am anxious that you should be aware of what we are doing and how our chemical investigations are influencing and benefiting Canadian agriculture.

Our general policy as regards the work of the chemical division remains unchanged. As from the institution of the experimental farms, we endeavour in the first place to be as useful as possible to the practical farmer in his everyday work, to get into close touch with those who are tilling the soil, to be as helpful as ever we can to the individual, and secondly, to carry out such investigations and researches by the aid of chemistry as may tend to solve the problems which are confronting the grain grower, the fruit grower, the dairyman, &c., in one or other parts of the Dominion. The results of such investigations are as a rule of more or less general interest. You will notice, therefore, that our work falls into two broad classes; that which has to do more or less directly with the interests of the individual farmer, and secondly that which undertakes the investigation of problems in connection with Canadian agriculture generally. But there is no hard and fast line of demarkation between these two classes of work; in fact, frequently the inquiries or samples sent by farmers have prompted and suggested lines of investigations. With regard to the work which we do for the farmers directly and as individuals, very few of the results appear in our annual reports and bulletins. Nevertheless, I feel that it is an extremely important branch of our work because it is directly useful, directly educational. It is carried out largely by correspondence. We act as a 'Correspondence School,' to whom all may apply free. We are a national 'bureau of information' in matters agricultural. As you are aware there is no postage required on

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letters addressed to the officers of the Experimental Farm at Ottawa. That no doubt is one of the reasons why the correspondence in all branches of the farm work is so large. This answering of questions, is I believe, a feature that is very popular throughout the country. Possibly you may think that the ordinary farmer knows very little with regard to the relationship, the bearing, of chemistry to agriculture, yet we have now a correspondence in the chemical division of something like 3,000 letters a year. There are inquiries from farmers all over the Dominion and relate to soils and their treatment, manures and fertilizers and their application, the relative value of cattle foods and the compounding of rations, to the quality of the drinking supply on the farm, to the nature and preparation of insecticides and fungicides and a whole host of other matters in which chemistry can be of assistance to the farmer or agricultural specialist in his daily work. Then, in addition to this correspondence (which necessarily consumes a very large part of my own time to attend to) we do what we can in the examination of samples forwarded by farmers. We do not undertake—it would not be possible nor desirable—to make a complete analysis of every sample of an agricultural nature that is sent in to us. It is a matter in which we must use judgment and discretion. Last year in the neighbourhood of some 600 samples were sent to the farm laboratory, consisting of soils, mucks, peats, marls and other materials which we may consider as naturally occurring fertilizers, cattle foods, insecticides and samples from farm water supplies. This may serve as a rough classification of the various materials which are being forwarded by farmers for analysis or examination. We thus endeavour to carry on, side by side, educational work with that of research—a plan which I believe is well suited to the needs of a comparatively new country. It has, we think, been fruitful of good results.

THE RELATIVE VALUE OF FEEDING STUFFS.

And now, having outlined our work, I propose with your permission, to discuss a subject that is attracting a good deal of attention to-day and upon which we have spent much time, namely, the feeding stuffs as found upon the markets of Canada.

By Mr. Broder:

Q. Do you publish the results of these analyses after they are made?

A. The greater number of them but not necessarily all of them. Those which we deem of sufficient interest to the community as a whole we publish in our annual report. For instance, in connection with the feeding stuffs we publish practically all our data but we do not burden our pages with material which would not be of general interest.

This is not the first time, gentlemen, that I have brought before the Committee the subject of the concentrated cattle feeds as found on our markets. For a number of years we have every season examined those samples which have been forwarded to us in order to furnish the sender with information as to the relative feeding values of these feeds, but during the past winter, more particularly, the interest in this matter has become more keen and there has been an increased demand for information bearing on these materials. There are perhaps two reasons for this interest. In the first place we have in many districts in Eastern Canada, experienced during the past three years, seasons of greater or less drought and that has necessarily meant a shortage in fodder and forage crops. As a consequence the farmers, stock feeders and dairymen have had to purchase larger quantities than usual of these concentrated feeds in order to supplement the home grown fodders and secondly, there is a greater number of these materials now upon the market by reason of the fact that certain classes of manufacture that give rise to by-products of feeding value, have multiplied.

Now, in the first place it is well to understand clearly what a farmer or dairyman purchases his feed for, that is, the particular nutrient or nutrients he wishes to purchase. You will say he naturally wants to get the best, that is, the most nu-

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trititious feed that he can for his money. Certainly. He looks about him, gets the market prices and considers as well as he can the nutritive value of such materials as are available to him. His experience as a farmer helps him greatly in making a choice. He has necessarily familiarized himself with a large number of these materials, such as bran and shorts. These he feels himself fairly competent to decide upon as to their approximate feeding value. But when he comes to a number of these milling and by-products that are offered him then he is more or less in doubt as to their value; he cannot tell from the mere appearance of many of them, and more particularly as the greater number of these materials are ground very finely, what their nutritive qualities may be. He must then resort to the chemist in order to learn the composition and properties of these feeds. We have, for instance, upon the market a number of by-products from the starch and glucose factories. There are four such factories in Ontario and their products include gluten meal, gluten feed, corn oil cake and corn bran. Several of these products are extremely rich and valuable but others are comparatively poor. We find that the feeds on the market show great variation in quality. Then there are the products of the oat meal mills and the 'breakfast food' factories, and in this connection I may point out that although oatmeal is a material in itself of high nutritive value, we have upon the market various products from such mills, some of which are comparatively worthless. I refer to feeds consisting largely of oat hulls. Then we have mixed feeds prepared from these milling products which are judiciously compounded, containing a certain proportion of crushed oats and crushed corn. In this way an attractive appearance is given to these materials, and they are put upon the market. I am afraid many of them are such as to deceive, at any rate they have an appearance which belies their true nutritive value. Many of them contain sweepings, weed seeds, &c. Then we have the by-products from the sugar beet factories. We have the dried exhausted pulp and that is put upon the market as such or in conjunction with molasses. Molasses also is fed in some districts and this may be mixed with peat, the peat being used as an absorbent to hold the molasses. The molasses is a by-product in the manufacture of beet sugar and also in the refining of cane sugar. We have also by-products from the manufacture of pearl barley and split pease and other articles intended for human consumption. The number of these by-products and milling products is constantly on the increase.

You will have inferred from what I have said that while many of these products are extremely valuable, as feeds, there are others comparatively poor, and still others practically worthless, and we wish to be able to inform the farmer where these various feeds stand relatively one to another. The farmer buys these concentrated feeds chiefly for the amount of protein or albuminoids they contain, as protein is the most valuable nutrient in a feeding stuff. Secondly, he wishes to know the percentage of fat they contain.

We may spend a few minutes in considering the constituents of a fodder or feeding stuff. There is first of all water. In ordinary dry meals, the concentrates as they are sometimes called, the moisture or water, may not exceed 10 per cent, it may be even lower than 10 per cent. In feeding stuffs such as we are considering the limit will be 8 per cent and 12 per cent, the lower the moisture content, other things being equal, the more valuable the feed. In the coarse fodders grown upon the farm, such as roots and ensilage, the percentage of water will be from 70 to 80 or even higher.

Protein or albuminoids. These terms include the nitrogenous compounds of a fodder. Protein, as I have said, constitutes the most valuable part of a feed. In the animal economy it is that which goes to repair the waste of the tissues, which furnishes the material to form the muscle (meat), the blood, the curd of the milk, &c. There is no other constituent in a fodder that can take its place for these purposes. The animal must have a certain proportion of protein daily in order to grow, to thrive, to give milk, &c. Now the home grown fodders—such as ensilage, roots,

timothy hay, &c.—are all materials which are comparatively low in protein. Consequently when a farmer purchases a meal he should look first of all for protein. He seeks to balance up the ration (as it is termed), to purchase a material with a high protein content in order to furnish the muscle and blood forming material in which his own foddere are more or less deficient. There is no substitute for protein, and therefore the intelligent feeder who is purchasing feeds inquires, first, what is the percentage of protein in the fodder offered to him.

Thirdly, the percentage of fat. Fat is a fattening agent of high value, that is to say, it may be converted more or less directly into the adipose tissue of the animal or made use of for the production of fat in the milk, as the case may be. It also is valuable for the production of heat and energy within the animal; it enables the animal to keep up its body temperature and to do hard work—it reduces the amount of protein otherwise necessary. Fat, therefore, stands next to protein—in fact in certain instances—according to the function of the animal, it may be fully equal in value to the protein.

Next we have the carbohydrates. It is a chemical term to include starch and materials closely allied to starch chemically. Starch does not form muscle, or blood, or the curd of milk, or wool, but it furnishes by its combustion within the body the heat which is necessary for the existence of the animal. It is also a producer of energy or the capacity of work within the animal. But it is well to remember starch has not the same value as fat, weight for weight, as a heat and energy producer. Approximately one pound of fat is equal to two and one half pounds of starch for these purposes.

Fifth, we find fibre. Of all the organic nutrients in a fodder, fibre has the lowest feeding value. As a rule, fodder which has a high percentage of fibre has a low feeding value. Fibre in so far as it is digestible, is used by the animal in the same way as starch but, in the majority of feeds the fibre is largely indigestible and is consequently valueless for the nutrition of the animal, though it may be of some service in giving bulk to the feed—a point of some importance. But the farmers' coarse foddere always supply a sufficiency of this constituent and there is no reason for purchasing it.

Lastly, there is mineral matter, or as we term it ash, which goes to build up the frame work, the bone of the animal and to furnish the small amount of mineral matter (lime, phosphoric acid, &c.) which is found in the various tissues of the body. There is always a sufficiency of ash in the home grown foddere to supply the needs of the animals.

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FEEDING STUFFS analysed at the Experimental Farm, Ottawa, 1907-08.

| Name of Feed. | Particulars (Manufacturer or Sender). | Moisture. | Crude Protein. | Fat or Oil. | Carbo-hydrates. | Fibre. | Ash. |
|----------------------------------|---|-----------|----------------|-------------|-----------------|--------|------|
| | | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| Corn products— | | | | | | | |
| Corn bran from Distillery... | H. C. Emerson, Corbyville, Que. (sender)..... | 7.89 | 10.25 | 2.65 | 57.53 | 16.02 | 5.66 |
| " " (dry feed)..... | The Edwardsburg Starch Co., Cardinal, Ont. (manufacturer) .. | 9.10 | 10.08 | 4.32 | 64.16 | 11.72 | 0.62 |
| " meal..... | I. H. T. Dunfield, Portage, N.B. (sender)..... | 11.70 | 8.00 | 4.49 | 72.57 | 2.02 | 1.22 |
| " kiln dried..... | H. M. Fowlds & Son, Hastings, Ont. (manufacturer)..... | 11.64 | 9.06 | 4.48 | 71.74 | 1.83 | 1.25 |
| (Gluten feed..... | Brantford Starch Works, Brantford, Ont. | 6.32 | 14.50 | 9.48 | 62.84 | 6.05 | 0.81 |
| " " "..... | Edwardsburg Starch Co., Cardinal, Ont. | 9.38 | 21.44 | 3.90 | 59.21 | 5.28 | 0.79 |
| " " "..... | " " "..... | 5.68 | 20.95 | 3.11 | 62.02 | 7.18 | 1.06 |
| " " "..... | Brantford Starch Works, Brantford, Ont. | 5.93 | 17.12 | 11.85 | 58.55 | 5.70 | 0.85 |
| " meal, Jersey brand..... | St. Lawrence Starch Co., Port Credit, Ont. | 5.81 | 14.94 | 2.91 | 71.95 | 3.56 | 0.83 |
| " " "..... | " " "..... | 6.15 | 18.25 | 3.65 | 64.46 | 6.77 | 0.72 |
| " " "..... | Edwardsburg Starch Co., Cardinal, Ont. | 13.29 | 33.96 | 2.97 | 48.07 | 6.93 | 0.78 |
| Corn oil cake meal..... | St. Lawrence Starch Co., Port Credit, Ont. | 10.09 | 22.25 | 11.78 | 43.23 | 9.53 | 3.12 |
| " " "..... | Edwardsburg Starch Co., Cardinal, Ont. | 10.96 | 20.45 | 11.45 | 45.68 | 9.22 | 2.24 |
| Wheat products— | | | | | | | |
| Bran..... | Wilson & Co., Arden, Man. | 5.99 | 12.81 | 4.17 | 5.35 | 15.74 | 5.94 |
| " " "..... | William Weld Co., London, Ont. (sender)..... | 10.58 | 13.63 | 3.98 | 57.02 | 9.44 | 5.35 |
| " " "..... | Mr. Wm. Wenman, Golden, B.C. " " "..... | 10.33 | 14.31 | 5.28 | 53.58 | 10.64 | 5.86 |
| " " "..... | R. J. M., Western Canada Flour Mills (manufacturer) .. | 6.85 | 15.48 | 5.54 | 54.94 | 11.07 | 6.12 |
| " " "..... | " Ogilvie Milling Co. | 6.69 | 16.06 | 5.50 | 55.26 | 10.04 | 6.45 |
| Feed wheat (frozen) No. 2 | Agricultural Division, C. E. F., Ottawa, Ont. | 9.96 | 13.21 | 2.51 | 68.81 | 3.38 | 2.13 |
| " " "No. 1 grade | " " "..... | 14.25 | 11.49 | 2.17 | 67.38 | 2.85 | 1.86 |
| " " "No. 2 " | " " "..... | 13.36 | 13.96 | 2.39 | 64.93 | 3.29 | 2.07 |
| Renfrew shorts..... | J. P. Robinson, Whitney, Ont. (sender)..... | 7.92 | 15.25 | 5.05 | 60.01 | 7.81 | 3.96 |
| Manitoba " " "..... | " " "..... | 6.67 | 16.00 | 5.42 | 57.81 | 9.86 | 4.24 |
| " " middlings..... | " " "..... | 7.46 | 17.12 | 5.85 | 58.35 | 6.89 | 4.33 |
| Oat products— | | | | | | | |
| Victor feed..... | American Cereal Co., Peterboro, Ont. (manufacturer) .. | 6.70 | 7.44 | 2.78 | 55.72 | 22.42 | 4.94 |
| Frozen oats..... | G. H. Hurton, Exp. Farm, Lacombe, Alta. " " "..... | 8.42 | 8.93 | 5.52 | 55.27 | 18.39 | 3.47 |
| Quaker oat feed..... | American Cereal Co., Peterboro, Ont. | 10.62 | 8.59 | 3.06 | 62.26 | 12.35 | 3.12 |
| Feed No. 1 ground oat straw. | G. G. N. Cooke, North Nation Mills, Que. (sender)..... | 7.97 | 7.19 | 1.43 | 56.81 | 23.75 | 2.85 |
| 75 p.c.; flour 25 p.c. | " " "..... | | | | | | |
| Feed No. 2 ground oat straw .. | " " "..... | | | | | | |
| Eureka feed..... | The Ogilvie Flour Mills Co. (manufacturer)..... | 7.27 | 5.33 | 2.21 | 46.16 | 33.34 | 5.69 |
| Oat feed..... | The Tilson Co., Ltd., Tilsonburg, Ont. (manufacturer)..... | 11.03 | 10.25 | 4.05 | 63.59 | 8.07 | 3.01 |
| " " "..... | " " "..... | 8.16 | 2.62 | 0.89 | 51.40 | 32.16 | 4.77 |
| Pea products— | | | | | | | |
| Whole peas (Arthur variety)..... | Agricultural Division, C.E.F., Ottawa, Ont. | 5.41 | 23.50 | 1.04 | 62.57 | 4.90 | 2.58 |
| Pea meal..... | Flavelle Milling Co. (manufacturer), (per Edwardsburg Starch Co.) | 8.80 | 25.50 | 1.74 | 53.53 | 7.13 | 3.30 |
| " " "..... | D. McPherson, Lancaster, Ont. (sender)..... | 7.84 | 16.00 | 1.24 | 41.09 | 31.05 | 2.78 |
| " " "..... | N. Sangster, manufactured by T. Baird & Son, Ormstown, Que. | 7.30 | 14.12 | 1.30 | 39.44 | 35.23 | 2.61 |

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| | | | | | | | |
|--|---|------|-------|------|-------|-------|------|
| Feed No. 1, from corn, rye and barley malt mash | H. Walker & Sons, Walkerville, Ont. (manufacturer)..... | 6.27 | 19.69 | 5.78 | 52.33 | 14.62 | 1.31 |
| Feed No. 2, from pure barley malt mash | " " " " | 3.83 | 17.56 | 5.05 | 49.30 | 20.46 | 3.80 |
| Feed No. 3, from rye and rye malt mash | " " " " | 5.01 | 14.31 | 7.12 | 60.48 | 11.85 | 1.23 |
| Apple pomace from cannery | Spratt & Schou, (manufacturer)..... | 1.46 | 9.31 | 4.71 | 50.87 | 31.22 | 2.43 |
| " " " cider mill | Col. D. W. Stevenson (sender)..... | 8.51 | 3.63 | 1.81 | 69.38 | 14.61 | 2.06 |
| " " " " | S. Allen, (manufacturer)..... | 5.53 | 5.19 | 2.46 | 66.20 | 18.38 | 2.24 |
| Feed No. 2, H. Walker & Sons Distillery | T. W. Raphael & Co., Montreal, Que. (sender) | 5.73 | 12.87 | 4.05 | 61.63 | 10.50 | 5.22 |

In this very brief review of the constituents of a fodder, I have intended chiefly to emphasize that the percentages of protein and fat in a feed must determine the feed's value to the farmer, as he will use the feed to supplement deficiencies in these constituents in his own home-grown coarse fodders. If he has a knowledge respecting the percentage of protein and fat in the feeds offered him he will be enabled to buy his feeds to the best advantage. With these few words of explanation, which I shall be pleased to amplify if any member desires, I wish to speak about these several classes of feeds, to which I have referred and examples of many of which I have brought with me to show you.

CORN PRODUCTS.

First we may consider the by-products from the starch and glucose factories. All manufacturers do not adopt precisely the same terms for these products, but the following are generally recognized in the trade. Gluten meal, especially rich in protein: Gluten feed, consisting chiefly of the gluten and corn bran mixed and containing much less protein than gluten meal. Corn oil cake, rich in gluten and oil, consisting of the corn germ from which the greater part of the oil has been expressed, and corn bran or the hull of the corn, with a very low feeding value. Their composition is set forth in the following table. The results are average, from the analysis of good samples.

CORN AND CORN PRODUCTS.

| | Moisture. | Protein. | Fat. | Carbo- hydrates. | Fibre. | Ash. |
|--------------------|-----------|----------|-------|---------------------|--------|-------|
| | p. c. | p. c. | p. c. | p. c. | p. c. | p. c. |
| Corn..... | 10·6 | 10·3 | 5·0 | 70·4 | 2·2 | 1·5 |
| Corn meal..... | 15·0 | 9·2 | 3·8 | 68·7 | 1·9 | 1·4 |
| Gluten meal..... | 10·5 | 34·75 | 5·58 | 46·92 | 1·77 | 0·48 |
| Corn germ..... | 10·7 | 9·8 | 7·4 | 64·0 | 4·1 | 4·0 |
| Corn bran..... | 5·54 | 11·47 | 4·53 | 59·49 | 17·95 | 1·02 |
| Corn oil cake..... | 6·95 | 26·56 | 14·40 | 40·00 | 10·46 | 1·63 |
| Gluten feed..... | 7·8 | 24·0 | 10·06 | 51·2 | 5·3 | 1·1 |

By Mr. Owen:

Q. Are these feeds for producing beef or milk?

A. They may be used for both classes of stock. The materials which go to form the casein of milk will also be useful in the formation of the muscle or flesh in the animal which is being fed for beef. It is the very same class of nutrient (protein) which is required for both purposes.

I may add a few words of explanation regarding these products. In the separation of the starch from the corn kernel, which, of course, is the primary object of the manufacturer, he finds that the residue may be divided into certain classes. These he may sell separately or he may mix them. In the latter case you have 'Gluten feed' which is not so rich in protein as 'Gluten meal,' because it contains the bran of the corn which is of poor feeding quality. Gluten meal, properly so called, consists very largely of the protein

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of the corn and is consequently the most valuable of all the by-products. The bran, or husk, or hull of corn is, as I have said, not of high feeding value. The embryo, or germ, separated in the process of manufacture, is very rich in oil. This oil is expressed by means of high temperatures and hydraulic pressure and the residue is known as corn oil cake, a sample of which I hold in my hand. This may be ground and sold as corn oil cake meal. It is a high class product. We have therefore, gluten meal representing the gluten or protein; corn oil cake as representing the embryo minus the larger proportion of the fat; and corn bran, a material of comparatively low feeding value. Gluten feed is a mixture, with a more or less variable amount of protein because it contains more or less corn bran. We must be careful therefore, to distinguish between that which should be rightly called gluten meal and gluten feed. Gluten meal is the gluten only, a material of high feeding value and should contain no corn bran. Gluten feed, on the other hand, is a term which designates a material made by mixing these by-products together.

Now, upon this chart (pointing to a chart on the wall) I give one or two analyses representing the products of several of our starch factories, and you will notice, not only considerable difference in protein content but that what is really gluten feed is in one case being sold under the name of gluten meal. Gluten meal, should, as I have said, contain in the neighbourhood of 30 per cent protein, but the 'Jersey brand gluten meal' contains not more than 18 per cent, and frequently much less. Occasionally I have found a gluten feed run as low as 12 per cent of protein. Now the point is this: if a gluten feed is sold as gluten meal and the farmer has no means of knowing that it is gluten feed, a species of fraud is being perpetrated. Perhaps I should not say, fraud, for of course a manufacturer may sell his feed under what name he pleases, so long as he does not infringe the copyright law. There is no provision by law that a gluten meal should contain a certain percentage of protein; nevertheless the fact remains that there are genuine gluten meals on the market and that there is a material being sold as gluten meal—I hold it in my hand now, which is made by one of the factories—and which is not a gluten meal at all, but simply a gluten feed. It does not contain much more than half the amount of protein which a true gluten feed should contain.

By Mr. Smith (North Middlesex):

Q. Was that a gluten feed which you had in your hand last?

A. It is sold as a gluten meal, but is in reality a gluten feed. I show you now a true gluten meal.

Q. There is quite a difference in the colour?

A. Yes, there is. On inspection a gluten feed can be distinguished from a gluten meal, though the percentages of protein could not be ascertained.

By Mr. Sexmith:

Q. Are those two feeds on the market now?

A. Yes, sir, those are on the market now, with several others.

Q. Do they sell this gluten feed at the same price as gluten meal? It seems to me there ought to be some way of preventing a fraud like that?

A. That is just what I am coming to.

Q. That is a ridiculous thing?

A. Yes, sir. It is just for that very reason that I am bringing this matter before the committee.

By Mr. Wright:

Q. Supposing a farmer wishes to find out the actual feeding value of a product that he is buying. If he sends it down to you do you give him an analysis of it?

A. Yes, but, of course, we ask that he shall furnish us with all information as to the manufacturer and vendor so that we can use that information for the agricultural public if we wish to do so.

Now you must not suppose that I am making a statement against the manufacturers generally. There are many honest and reputable manufacturers and they naturally wish to sell their material at the highest possible price. There is no law in this country, however, to prevent the sale of inferior feeds under names usually attached to feeds of high feeding value. Nor do I think we could enact such a law; but what I do wish to see is some enactment that will compel the manufacturers to state the percentages of protein and fat the feed contains. I have brought this subject before the committee on several occasions and I think the time is now ripe to consider it with a view to some legislation that would protect the farmers' interests and I see no plan that would do so effectively as making the manufacturers 'tag' his products, giving the protein and fat content. I might say that this matter has not only been brought to our attention by the purchasers of feeds but also by the manufacturers of reputation. Certain of the manufacturers have pointed out to me that they are putting a good material on the market whereas materials under the same name are offered to the public the actual value of which the public have very little means of judging but which are of decidedly inferior quality.

By Mr. Broder:

Q. Are these products obtained by taking more out of the grain or mixing something with it?

A. They are obtained by extracting the starch from the corn. In the gluten meal we have chiefly the protein of the corn, but in the gluten feed we have not only that but the bran.

Q. It brings the average down?

A. Exactly, it brings the percentage of protein down.

The practical conclusion from this is, that the sale of concentrated feed stuffs should be under the control and inspection of some branch of the government service, that these materials should be sold and be subject to inspection in the same way as our fertilizers are. May I repeat. The ground that I take is this: fertilizers are plant food, these materials are cattle feeds, and if it is desirable and necessary to protect the interests of the farmer with respect to the composition of commercial fertilizers it is equally important to protect his interests in connection with the composition of cattle feeds, and possibly more so, because where there is one farmer who buys commercial fertilizers there certainly must be ten farmers who buy cattle feeds.

By Mr. Broder:

Q. In the county I represent a great deal of feed is bought.

A. Undoubtedly a large quantity of these feeds is used by the farmers, and as I have said, many of the purchasers have not much experience in judging the feeding stuffs at their true value. Further, an analysis is absolutely necessary in many instances—You can tell but little by merely inspecting the feeds, especially if finely ground.

By Mr. Smith (Middlesex):

Q. Could not a farmer by mixing corn with other feeds of higher feeding value arrive at the same result?

A. Possibly so, but that would depend—to do it profitably—very largely upon the part of Canada in which he lived; I do not think it would pay him to grow corn in this (Ottawa) district, that is, for grain. In this district we grow corn for ensilage purposes but not for grain. There is a very much higher percentage of protein (which

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is the material the farmer is looking for) in gluten meal than there is in corn as a whole, simply because the manufacturer has taken out the non-nitrogenous parts, the starch; the part which is of comparatively little value to the farmer has been extracted and sold as starch to be used for other purposes, and that which is left behind is far more valuable for feeding purposes than the whole grain.

By Mr. Broder:

Q. The farmer cannot understand that very well and wonders how it is that the more you take away the more you have left.

A. It ought not to be a very difficult matter to explain to him that what he needs to buy is chiefly protein and that taking the starch from the corn leaves its protein as a by-product.

By Mr. Sexsmith:

Q. I understand that they grind up oat hulls and mill sweepings and mix them with the shorts?

A. So they do at times and we have had some feeds of that character sent to us.

Q. And the farmers buy it and pay the price of shorts for it?

A. Presumably so.

By Mr. Blain:

Q. Is there much increase in the sale of this class of feed?

A. There is I think; the factories can dispose of all they have quite easily and readily at good prices. As I have told you there is a scarcity of fodder owing to the drought last year and men have to buy larger quantities than usual to supplement their supply of home-grown fodders.

Q. There is a scarcity of fodder you think?

A. Yes, for the reason I have stated and further, I think the increase in the dairying and feeding industries generally has also affected the demand. It is an advantage to use feeds with high protein content, if used judiciously, for undoubtedly the land is thereby improved. The manure produced from these high class feeds is very valuable and serves to maintain the fertility of the soil.

By Mr. Owen:

Q. Do you issue pamphlets giving your valuable knowledge on these foods to the public?

A. Do you refer to special bulletins on feeding stuffs?

Q. Yes.

A. We have only published the analyses of these foods in our annual reports.

Q. Would it not be better to put it in the form of a pamphlet and distribute it among the farmers for their benefit?

A. It might be, but I must point out to you that we haven't the machinery in the Department of Agriculture to make an official collection of such foods as may be found in every part of Canada. The Experimental Farm has no machinery for making such a collection.

By Mr. Broder:

Q. The Inland Revenue Department has? What do you propose?

A. Yes, the Inland Revenue Department has. My position is, that all the materials offered as feeds, that is sold at over \$10 per ton, should bear a tag upon which should be printed plainly the percentages of protein and fat which that food

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contains. Our analyses are merely of such samples as may have been forwarded to us by individuals seeking information, but we have not any machinery for the collection of samples generally. Much would be effected if manufacturers would state the composition of the feeds they offer for sale.

By Mr. Owen:

Q. You have no machinery for obtaining samples of feeds?

A. No, not for the general collection of samples of these foods which are offered for sale and having them analysed. You are doubtless aware, that in connection with commercial fertilizers, the work of collection and analysis is done by the Inland Revenue division. The officers of that department collect the samples, duly label them and forward them to the laboratory of the Inland Revenue Department. If this work is undertaken in a systematic way it will have to be done in some manner, either by the Inland Revenue Department or by some other department of the government service that has the necessary machinery; that is a matter to be decided upon later but the first thing to do is to determine if it is desirable to control, in some such way as I have pointed out, the sale of feeding stuffs. Nearly every state in the Union, within the last five years, has adopted some law in connection with the sale of these concentrated feeds; while the law is not the same in every state, almost every state in the Union insists that the vendor or manufacturer must place upon each and every package of the feed, a tag stating the percentage of protein and fat the feed contains. I think we should do the same in Canada. You will find that the farmers are very warmly in favour of some such action on the part of the government, and you will also find, I think, if you make inquiries among the better class of manufacturers, the men who are turning out a high quality of gluten meal and linseed meal and so forth, that they are also favourable towards such an enactment. It is desirable that the farmer should be able to buy according to the actual feeding value of the feed.

By Mr. Owen:

Q. Do you, during your spare time, make it a practice of lecturing to the farmers throughout the country?

A. No, we cannot be said to have any spare time.

Q. You have no means of reaching the farmer?

A. Oh, yes, we have, it would not be right to allow that impression to go abroad.

Q. Well, will you please explain that?

Q. When an invitation comes from an agricultural association or a convention for some member of the staff to attend, that request is forwarded to the Minister of Agriculture, if it has not already been sent to him direct, and it is for him to say whether one or two, as the case may be, of the officers of the experimental farm shall attend to give the information required or to address the convention or association. As a matter of fact we have two or three of our staff now engaged in such work. My first assistant Mr. Charron, is in the province of Quebec and has been there for the past month lecturing at meetings of farmers. Personally, of course, I cannot attend to the Farmer's Institute work, but I do go to a number of the larger agricultural conventions, either dairying or fruit growing conventions, as the case may be, sometimes in one of the Maritime Provinces, sometimes in Ontario, but we do not make it a practice, you understand, of making an itinerary ourselves amongst the Farmers Institute; it is only upon request that we attend.

Q. And you would have to depend a great deal upon these farmers who attend the conventions carrying the knowledge that you convey to them or the members attending this Committee, to the farmers generally?

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A. Yes. As I have said our annual reports contains these analyses and they have a very extensive circulation. Again, there is the wide circulation of the 'evidence' given before this Committee; that is a valuable means of disseminating information. I have referred already to the correspondence, which is very heavy, I am every day answering questions sent by farmers with respect to feeds, fertilizers, etc., so that our farmers have the means, if they will only avail themselves of them, of obtaining that information. No doubt there are some people who either do not know or do not avail themselves of the opportunity of acquiring information in this matter. All this, in my opinion, does not do away with the advisability for parliament to enact some law which will compel the manufacturers to label their materials in the manner I have suggested.

By Mr. Wright:

Q. With respect to the distribution of your evidence, I believe it is the custom to give each member of the House of Commons some 65 or 70 copies of the evidence of each witness appearing before the Committee, I presume some of the members send out those copies to the farmers in their constituencies? In addition to that you have a mailing list?

A. Yes.

Q. But only the farmers who send in a request for the reports get them?

A. Yes, but nevertheless our mailing list contains many thousands of farmers' names.

Q. But that number will only comprise a very small portion of the farmers of this country; only a very small percentage of those engaged in agriculture will be reached in that way. I think that possibly you might make use of the agricultural newspapers as a channel by which you might reach the farmers of this country. You might induce some of the papers to publish your reports. I think in that way you would reach a far larger number of the farmers in this country?

A. I suppose it would have to be spontaneous on the part of the press. We could scarcely do more than ask them, we could not compel them to publish our reports. Some of the papers use them as it is, but certainly they might do so to a greater extent than at present, to the benefit of their readers.

By Mr. Owen:

Q. Why not put them on the patronage list?

A. I understand there is not any, so far as we are concerned.

By Mr. Sexsmith:

Q. Have you received many samples of feed sent in from the country?

A. The samples I have brought with me are some of those which have been sent in during the past winter. We have analysed between 70 and 80 since the publication of the last report.

By Mr. Barr:

Q. Then you did not get these feeds from the factories?

A. A few of them were sent from the factories.

Q. I thought you got samples from the factories?

A. Not as a rule, they are sent in by farmers.

By Mr. Sexsmith:

Q. These samples came from the people who are using them?

A. Yes, for the most part. If for the purposes of making a comparison we need a sample from some factory, then we send for it. Our general method of procedure, however, is to furnish the information on the samples which are forwarded by purchasers.

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BRAN AND SHORTS.

By Mr. Sexsmith:

Q. Have you had any samples of shorts sent in?

A. Yes, and samples of bran also.

Q. How do you find these?

A. The shorts as a rule have been fairly good, that is to say, the variations in composition have been small. I have not noticed anything which I would call adulteration. I have brought with me this morning two samples of bran for your inspection and while they may not be considered extremely poor, they contain a considerable proportion of oat hulls and other foreign matter which reduces their nutritive value. These samples of bran contain from two to four per cent less protein than the genuine bran does. Now that may be accidental, but the fact remains that they contain a considerable proportion of oat hull that reduces the feeding value of the bran.

By Mr. Robb:

Q. Do you mean oat hulls?

A. Yes, largely oat hulls, with broken straw and other foreign matter.

By Mr. Broder:

Q. Have you ever noticed any oat seeds?

A. Occasionally in bran but not frequently. In the finely ground milling by-products it is impossible to say from inspection what the feed may contain. The ground feeds from the elevators are mixtures of uncertain feeding value. They must be analyzed to ascertain what they are worth.

By Mr. Robb:

Q. There is a very large amount of Northwest or Manitoba bran now sent down into this country. How does that compare with the Ontario bran as ordinarily put up?

A. It is very close, extremely close. We made analyses two years ago, of a number of samples of bran and shorts from the western mills as well as the Ontario mills and as a rule the bran of the Northwest wheat runs a little higher in protein but the difference is not a large one. The following tables present our results from the analyses of genuine brans and shorts.

ANALYSIS OF BRANS.

| Name of Milling Firm. | Address. | Moisture. | Protein. | Fat. | Carbo-hydrates. | Fibre. | Ash. |
|----------------------------|-----------------------------|-----------|----------|-------|-----------------|--------|-------|
| | | p. c. | p. c. | p. c. | p. c. | p. c. | p. c. |
| Ogilvie Flour Mills..... | Winnipeg, Man..... | 9.73 | 14.00 | 4.55 | 55.18 | 10.74 | 5.80 |
| Alexander & Law Co..... | Brandon, Man..... | 10.57 | 15.19 | 5.19 | 53.83 | 9.80 | 5.42 |
| Lake of the Woods..... | Portage la Prairie, Man.... | 9.89 | 14.81 | 4.68 | 53.75 | 10.63 | 6.24 |
| " " | Keewatin, Ont..... | 10.83 | 14.56 | 3.60 | 54.56 | 10.93 | 5.52 |
| Goldie Milling Co..... | Galt, Ont..... | 12.70 | 13.25 | 3.78 | 54.61 | 9.66 | 6.00 |
| Tilsonburg Milling Co.... | Tilsonburg, Ont. | 11.81 | 14.19 | 4.17 | 54.45 | 9.70 | 5.68 |
| Kingston Milling Co | Kingston, Ont..... | 10.65 | 15.31 | 4.87 | 52.96 | 10.35 | 5.86 |
| Winchester Roller Mills... | Winchester, Ont..... | 12.37 | 14.84 | 4.12 | 54.20 | 9.28 | 5.19 |
| | Average | 11.07 | 14.52 | 4.37 | 54.19 | 10.14 | 5.71 |

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ANALYSIS OF SHORTS.

| Name of Milling Firm. | Address. | Moisture. | Protein. | Fat. | Carbo-hy- drates. | Fibre. | Ash. |
|----------------------------|-----------------------------|-----------|----------|-------|----------------------|--------|-------|
| | | p. c. | p. c. | p. c. | p. c. | p. c. | p. c. |
| Ogilvie Flour Mills..... | Winnipeg, Man..... | 8·88 | 15·62 | 4·83 | 59·07 | 7·51 | 4·09 |
| Alexander & Law Co..... | Brandon, Man..... | 9·83 | 17·00 | 6·23 | 59·12 | 4·43 | 3·39 |
| Lake of the Woods..... | Portage la Prairie, Man.... | 9·54 | 16·03 | 5·97 | 59·15 | 5·41 | 3·90 |
| " " | Keewatin, Ont..... | 10·38 | 16·25 | 5·50 | 57·40 | 6·51 | 3·96 |
| Goldie Milling Co..... | Galt, Ont..... | 12·34 | 14·62 | 4·54 | 58·76 | 5·74 | 4·00 |
| Tilsonburg Milling Co..... | Tilsonburg, Ont..... | 11·60 | 16·75 | 5·61 | 57·55 | 4·77 | 3·72 |
| Kingston Milling Co..... | Kingston, Ont..... | 10·81 | 16·41 | 5·38 | 60·07 | 3·82 | 3·51 |
| Winchester Roller Mills... | Winchester, Ont..... | 12·13 | 15·15 | 3·98 | 60·50 | 4·80 | 3·44 |
| Woodstock Roller Mills .. | Woodstock, N.B..... | 7·58 | 15·56 | 5·09 | 64·56 | 4·11 | 3·10 |
| | Average..... | 10·34 | 15·93 | 5·24 | 59·58 | 5·23 | 3·68 |

By Mr. Blain:

Q. Before you leave the subject of feeds, may I ask is there any quantity of feed imported into Canada?

A. Of the gluten feeds?

Q. Yes?

A. No, I do not think there is any brought into Canada.

Q. There is none imported?

A. I do not think so. There is a good deal manufactured in the States, of course, but I believe it is all consumed there. I have not heard of any American brand upon our Canadian market. Probably the prices are higher in the States than here, and if so there would be no object in sending the feeds into Canada.

Q. I was not speaking of prepared feeds?

A. I cannot speak with certainty, but all that I have said this morning refers to Canadian products. No American feed has come under my notice.

By Mr. Barr:

Q. You think the feeds from the west have more seeds in them?

A. The milling and manufacturing products I have been speaking of do not come from northwestern Canada. They are chiefly Ontario products. We have bran and shorts from the west and certain feeds from the elevators.

Q. Well, I will ask you now if that is the case in regard to the feeds coming from the west?

A. In the bran?

Q. In the bran, do you find more noxious seeds?

A. No, on the whole the bran is of a good quality. We have not examined many samples of bran and shorts recently. The two brans I brought here do not contain noxious weed seeds. There is a certain admixture of hull and broken straw, and I cannot believe that that is accidental, but there are no weed seeds. The feeds from the elevators are largely composed of ground weed seeds. Some of them contain a proportion of ground barley, flax, &c.

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OAT PRODUCTS.

For the most part these are low-grade feeds, with a small percentage of protein and a high fibre content. A number of these have been analysed and their composition is given on the chart before you. 'Victor' feed contains about $7\frac{1}{2}$ per cent of protein only and 22 per cent of fibre. 'Quaker oat feed' contains between 8 and 9 per cent protein and 12 per cent fibre. 'Eureka' feed contains 10 per cent protein and 8 per cent fibre. In most of the feeds of this class there is a large proportion of hull and other offal from the mills, which may not be discernable if the feed is finely ground. Some of these contain a sprinkling of cracked corn to help their sale.

By Mr. Sexsmith:

Q. Is the Eureka feed manufactured by a Toronto firm?

A. No, the Eureka feed is manufactured by the Ogilvy Milling Company, whose head office is in Montreal.

From the composition of these three feeds, which I bring before you as examples, it may be gathered that these products from the oatmeal mills and breakfast food factories are generally of very poor quality. We analysed one sent us from Prince Edward Island but which had been imported from Ontario, that contained 2.62 per cent of protein and 32.16 per cent of fibre; it was a worthless feed. Such a material is not worth buying at any price. I have yet to find a feed of this class that was worth the price asked, but yet they appear to compete successfully with bran, gluten meal, gluten feed, etc., products of high feeding value.

Q. Have you a sample of the Quaker Oat Feed?

A. Yes. (Producing sample).

By Mr. Robb:

Q. Oat hull is selling at \$7.00 a ton?

A. I would not like to give \$7.00 a ton for oat hull. There is far better value on the market.

By Mr. Broder:

Q. It would not be as good as hay?

A. No, not nearly so valuable.

These three meals we have just discussed will emphatically impress you with the desirability of giving our farmers information, official information, as to the percentages of protein and fat in the feeds they purchase. You will recognize that we have materials on the market containing 35 per cent of protein—and protein is one of the two constituents that should fix the price of the material—and again others containing not more than one-fourth this amount—and yet the difference in price may be but slight.

By Mr. Sexsmith:

Q. Upon what principle is this Quaker Oat Feed, which has only 8.6 protein, made up?

A. I cannot say exactly, but presumably it is the by-product from the manufacture of oatmeal or certain breakfast foods. It may contain some ground grain—I suppose there is, or the percentage of fibre would be higher.

By Mr. Robb:

Q. Has it not the inner hull of the oat ground very fine?

A. It may.

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Q. Is there any corn in that?

A. There is a certain amount of corn, ground corn, in it. They have a habit of putting in a certain amount of corn, to aid in the selling of the material I imagine. You will see these are all types of low class feeds and the point is, they are fetching prices on the market far above their real value.

PEA PRODUCTS.

I should like to say a word or two with regard to pea meal. The genuine article is a material of high feeding value. It will contain in the neighbourhood of 35 per cent of protein, which is highly digestible, and it will not contain more than 4.5 per cent of fibre. Pea meal, however, is a material which is not rich in fat. Its essential constituent is protein and it is very valuable for supplying that nutrient. We find that many of the pea meals upon the market are far below the genuine article. I have brought with me two samples of pea meals which were forwarded to me during the past winter and they are both of inferior quality.

Q. What is the difference between these and the genuine pea meals?

A. They are adulterated by an admixture of pea hull, making a poor quality of pea meal. They contain an extraordinary proportion of pea hull. You will understand that in the manufacture of split pea for soup purposes, the hulls are separated and consequently a considerable number of hulls accumulate. Now the hull of the pea is an extremely poor food. The hull or bran of the pea contains only 5 per cent of protein and over 50 per cent of fibre, consequently if the pea hulls are put in with the ground peas it must reduce the proportion of protein and increase the percentage of fibre in the resulting meal very largely. That sample which I have shown you contains a large admixture of pea hulls. Almost every sample that we have received this winter—we have not received very many certainly—has been found to be largely admixed with pea hulls.

By Mr. Broder:

Q. You could not get peas without hulls?

A. No, we cannot get peas without hulls. You will see from the chart that in genuine pea meal there is 22.5 per cent protein but in those samples which I have handed to you for inspection, we have in one case 14 per cent and in the other 17 per cent of protein. It is evident, therefore, that one of these meals is worth little more than one-half of what the genuine pea meal is worth. This furnishes you with another example which will impress you with the desirability of compelling these materials to be sold according to guaranteed protein content.

By Mr. Smith (Middlesex):

Q. In the pea brans which are of the poorest quality there seems to be a larger percentage of fat than in the pure sample?

A. That is true, but in this case fat is of minor significance. The percentage of fat in pea bran is .44 a trifle under one-half of one per cent. The percentage of fat in the whole peas, that is in the kernel and the hull ground together is slightly over 1 per cent. Fat is very low in peas generally.

Q. I notice that in the samples there, the poorer qualities are higher in the percentage of fat than the pure meal?

A. Yes, they are slightly higher, it is true, but the difference is very small.

COTTON SEED MEALS.

Now I might pass on to speak of another class of foods, cotton seed meal, which though not largely used in Ontario, is fed considerably by the farmers of the Maritime Provinces. It comes generally by water freight from Florida and the Southern States.

There are several qualities of cotton seed meal upon the market. The genuine meal is one of high food value; its protein content is between 30 and 40 per cent besides some 10 per cent oil or fat, all of which makes it a highly concentrated food. I have brought two samples with me which may be considered as typical. One is a first-class cotton seed meal and the other an extremely poor one. Those who are conversant with this class of feed would have no difficulty in assigning a lower value to this sample from Barbados than to this other sample which I present to you under another name. The percentages of protein in these two, which I have handed to you are 26 and 43 respectively. It is scarcely necessary for me to emphasize the tremendous difference in food value of these two samples.

Q. This sample from Barbados contains 26 per cent of protein only?

A. Yes, it contains a very large proportion of hull, which lowers the protein content, increases the indigestible fibre and makes the feed of very inferior quality.

OIL CAKE MEAL.

By Mr. Hodgins:

Q. What is the food value of flaxseed?

A. Linseed meal or oil cake meal, as it is generally termed, will run about 32 per cent of protein and from 9 to 12 per cent of oil or fat. It is one of our most valuable feeds for supplying protein and fat and has deservedly won a high reputation among feeders. Oil cake meal is a by-product, the residue from the extraction of linseed oil from flax seed. The meal of flax seed (ground flax-seed) is but little used in feeding.

Q. And the food value of oil cake meal is high?

A. Yes, it is one of the most concentrated feeds. I think it is worth now about \$30 a ton, and it is undoubtedly a very excellent food and worth the money, compared with the price other foods are now bringing. All the samples I have examined from Canadian mills have been of good quality.

Q. A great many farmers use the meal from their own flax-seed?

A. Possibly so, but I cannot speak definitely on that point. It would be a very valuable feeding stuff.

MOLASSES FOODS.

The National Molasses Stock food consists of dried exhausted beet pulp to which molasses has been added, and while this material is not rich in protein, it contains a notable amount of sugar; it is a palatable feed of considerable value. 'Molasket Feed' is a material prepared from crude molasses and peat.

By Mr. Sexsmith:

Q. Peat?

A. Yes, with peat which is used as an absorbent, as a vehicle or means which allows the molasses to be used in convenient form.

Q. That is added, I suppose, to increase its weight?

A. No, not necessarily. Peat is used very largely in Germany to mix with molasses; the product is there a feed of recognized value.

Q. There is lots of peat up in Peterboro county but I did not know it was used for cattle food?

A. You must not suppose that the animal obtains any benefit from the peat which is associated with the molasses; the peat is used as an absorbent; it provides for the presentation of the molasses in an acceptable, convenient form. It has also another function. It is known that the molasses fed alone, owing to the potash salts which it contains, has a laxative effect upon the animal; if peat is associated with it larger

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quantities of molasses can be used without the laxative effect being noticed. It is evident, therefore, that peat acts as a corrective, correcting the laxative action of the molasses.

Q. Is not the peat a detriment to the animal?

A. No. There is no nutritive value in the peat, but used in this way it is not injurious to the animal. It acts, I presume, largely as so much indigestible vegetable fibre.

By Mr. Barr:

Q. What does molasses consist of?

A. It is a solution of uncrystallized sugars, and occurs as a by-product in the refining of sugar.

Q. What kind of sugar?

A. Beet sugar and cane sugar.

By Mr. Sexsmith:

Q. What would be the commercial value of peat and molasses feed?

A. I cannot give you the price at present, but think it is in the neighbourhood of \$18.00 to \$20.00 per ton. It is a material which must be valued simply from the amount of sugar that it contains; it is not a feed that furnishes protein. Molasses feed contains 56.89 per cent total sugar, of which 34.08 per cent is cane sugar and 22.81 per cent invert sugar. The use of sugar, as in molasses and molasses feeds, undoubtedly adds to the nutritive value of the ration, for practical experience has shown that in addition to its function as a heat producer in the system, sugar may be employed, within a reasonable limit, as a fattening agent. Apart from their direct food value, these sugar feeds are stated to act beneficially in increasing the appetite, stimulating the digestion and in keeping the animal in a thrifty condition.

Q. But it must have some relative value?

A. Yes, it has a relative value, that is quite true. That value, as I have pointed out, is dependent upon its percentage of sugar.

Q. Will you tell us how it would compare with other feeds?

A. That I can scarcely do, for it is in a class by itself. Other feeds are bought for their protein and fat, this feed has practically neither; it is not a concentrated food. It could not be used to 'balance' the ration, that is, to increase its protein content, it would be necessary for the best returns, to feed in association with other feeds that more particularly furnish protein, such as gluten meal, bran, or oil cake meal. But there is no doubt it is an appetizing material and that the sugar in it is highly digestible and that this sugar has a considerable value in the animal economy, both for the development of heat and energy and also for the production of fat.

By Mr. Smith (North Middlesex):

Q. Does not one of the values of that peat molasses lie in the fact that it makes other feed—probably very rough feed—more palatable?

A. Yes. I think it may have a value in that respect because it is undoubtedly a palatable and appetizing material. These remarks, of course, apply to other feed which I have shown you, consisting of dried exhausted beet pulp to which molasses have been added.

By Mr. Nantel:

Q. What is the price of these feeds?

A. I think they are selling at about \$18.00 or \$20.00 a ton, but the exact price to-day I cannot give you.

BENTS MILK ALBUMEN.

The sample which I now exhibit is a new material which has recently been put upon the Canadian market; it is an American product. It is used more particularly in the feeding of poultry. It is a very high grade material and appears to be a by-product in the manufacture of milk sugar. In other words it consists largely of the casein or curd of milk which has been separated, dried and ground. There are two grades, one containing about 40 per cent, the other about 70 per cent of protein, consequently both are extremely concentrated materials. They can only be used in small quantities, on account of their high protein content, but used judiciously they appear to give good returns. They are high priced materials, in the neighbourhood of three cents per pound, I believe. Our experience with them is as yet limited, but if the price is not too high I believe they will be found of value in poultry feeding, for laying and fattening stock.

CONDIMENTAL FOODS.

By Mr. Sexsmith:

Q. Have you ever had any samples of stock foods, condimental foods, sent in to you?

A. Yes, we have and they have given us a great deal of trouble in their analysis. We do our best to point out to farmers that they are not worth the money asked for them. It is only a day or two ago that a sample was sent to us; it was a pound package with the price 50 cents on the label. The printing thereon was in French and the announcement was made on the bottom of the label that it was prepared by a certain Dr. Macdonald of the Experimental Farm at Ottawa. Of course, there is no such person at the Experimental Farm. Unfortunately we have not succeeded in tracing the habitat of the manufacturer so that we have been unable to prosecute him. This material is sold, as I have said, from 50 cents a pound and I presume it is worth between 3 and 4 cents, certainly not more than 10 cents.

By Mr. Rutan:

Q. Have you ever had herbageum sent in to you?

A. Yes, and you will find the analysis in my reports of 1904 and 1905. It contains about 20 per cent protein and 5 per cent fat. It is made with bran, wheat refuse and some linseed meal. It contains sugar, salt, charcoal and fenugreek. At that time I took up this matter of the condimental food stuffs and showed that they were being sold at fabulous prices, from the nutritive standpoint. We discountenance the purchase of the foods in emphatic language but their sale continues. It would be far better for the farmer to buy good wholesome feeds at reasonable prices and use them rationally.

By Mr. Sexsmith:

Q. What if they are sold as medicine?

A. If they are sold as medicines, again, I say, their price is extravagantly high. What are the drugs used in compounding them? Saltpetre, charcoal, sulphur, sulphate of iron, salt, gentian root, fenugreek, &c. They are all low-priced drugs. Some of them are only worth 3, 4 and 5 cents a pound and none of them more than 10 cents a pound, if my memory bears me out. If the animals require medicine, it would be cheaper and better from every point of view for the farmer to purchase at the drug store what he wants and to doctor the animals according to the ailment.

Q. Have you ever had any experience of the international stock feed? It must be very cheap because it costs them, they say, over two millions a year in advertising?

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Q. Yes, we have analysed that feed and it has a very low value compared with its price. It contains about 13 per cent protein and 4 per cent fat. It is made from 'wheat feed.' It contains salt, charcoal, fenugreek and probably gentian. None of the constituents are costly.

By Mr. Smith (North Middlesex):

Q. At Washington that feed was analysed and the report said the cost was 1 cent a pound?

A. I daresay such is the case. The factories are situated in Minneapolis where there are large flour mills and necessarily a tremendous amount of refuse and waste products accumulates. This is largely used no doubt in the compounding of the feed. The sale of this feed is tremendous and all sorts of schemes are employed to advertise it, for the profits are large. It is difficult to understand why farmers will persist in buying these condimental foods, especially when their nature has been made public in our reports and the agricultural press.

By Mr. Sexsmith:

Q. The manufacturers say their cost for advertising is \$2,000,000 a year. Who pays for that?

A. The consumer, the purchaser.

Q. The farmer?

A. Yes, there can be no doubt as to who pays for the advertising and also the large dividends. It is a profitable business, once it is well advertised.

By Mr. Rutan:

Q. There is an awful amount of that stock feed sold throughout the west, tons of it?

A. Possibly. We do all we can to keep the farmer posted as to the character of these materials. We give him all the information necessary to form a judgment as to their true value, but we cannot prevent him buying them. We find no occasion on the Experimental Farm to use them nor do the best feeders and dairymen.

By Mr. Hodgins:

Q. Speaking of oil cake meal, there is a lot of it used by the farmers but there is an impression that it is too strong a feed to use?

A. It cannot be used alone; it is too concentrated. But it is valuable as a part of the ration in supplying protein and fat. The quantity that can be used profitably in the meal ration, will largely depend on the requirements of the animal.

Q. How about pea meal?

A. It is, if genuine, a concentrated feed and must be used in conjunction with foods of lower protein content, in the same way as I have described for oil cake meal.

Q. It is a strong food?

A. Yes. It is one of the strongest foods. Mixed with shorts and crushed oats it makes a valuable feed for pigs. It can similarly be used for the other classes of stock.

Q. It is as strong as cotton seed meal?

A. No, but nevertheless it is a concentrated feed. These highly concentrated meals are used to 'balance the ration' and supply protein and fat in which the home grown coarse fodders are not rich. The latter (hay, roots, straw, etc.), contain less protein and fat than oil cake, gluten meal, cotton seed meal, linseed meal, and hence it is necessary to supplement them, as I have described for the best returns. No feeder of experience would think of using oil cake meal, or cotton seed meal or pea meal alone.

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Q. What would you recommend along with linseed meal?

A. It may be used in connection with bran, shorts, crushed oats and barley. These feeds contain less protein than the linseed meal but will serve to give bulk to the ration and make it more digestible. Highly concentrated feeds, that is those very rich in protein and fat, must be fed, carefully and judiciously, both from the standpoint of profit and the health and thrift of the animal. Cotton seed meal, especially, must be fed carefully or the digestion of the animal will be deranged.

By Mr. Smith (Middlesex):

Q. These concentrated foods, for instance, whole flax-seed ground mixed with bran, bring up the balance of the ration in connection with ensilage?

A. Yes, they supply the protein and fat, in other words they balance the ration and serve to satisfy the requirements of the animal. Ensilage and roots, though valuable, do not furnish sufficient protein for the wants of the animal, and therefore, their use is supplemented with one or more of the meals we have been considering. The ration is compounded having in mind, the age and function of the animal and the nature of the feeds available.

The hour of adjournment having arrived the witness retired.

Committee adjourned.

Having read over the preceding transcript of my evidence, I certify the same to be correct.

FRANK T. SHUTT,
Chemist,

EXPERIMENTS IN HORTICULTURE

HOUSE OF COMMONS,

COMMITTEE ROOM No. 34,

WEDNESDAY, March 10, 1909.

The Select Standing Committee on Agriculture and Colonization met here at 11 o'clock a.m., Mr. Schell, chairman, presiding.

The CHAIRMAN: Mr. W. T. Macoun is present to address you this morning on matters connected with horticulture. I am sure, from the samples of fruit he has brought with him, you will be favoured with information that will not only be valuable but most interesting.

Mr. MACOUN.—Mr. Chairman and gentlemen,—I thought as there would probably be a number of new members here today, that it might be well to tell you at the outset a little about what we are trying to do at the Experimental Farm for horticulture in Canada, so that you will understand perhaps better the experiments which I would like to tell you about later on.

WORK OF THE HORTICULTURIST.

The horticulturist at the experimental farm has in charge about 126 acres and that area is divided as follows. There are 27 acres devoted to tree fruits, 2 acres devoted to grapes and 11 acres devoted to small fruits, vegetables, &c., making 40 acres devoted to horticulture proper. In addition to that the horticulturist, who is also curator of the Botanic Garden, has charge of 65 acres which is devoted to the arboretum and Botanic Garden. He has also charge of 21 acres of experimental forest belts which run around two sides of the farm covering the 21 acres, making a total of 126 acres out of the 456 on the farm.

I may divide my work into five headings: First there is the experimental work, second the compiling of the results of our experiments in the form of reports and bulletins, third there is the correspondence, fourth, there is the identification of specimens which are sent in to us, and fifth, there is the attending of meetings. In regard to the experimental work on the farm we have during the last 22 years carried on a great many experiments there which you will find in the 21 annual reports which have been published by the horticultural division. Some of the principal lines of work have been the testing of varieties, the origination of new varieties, top grafting experiments, experiments in different methods of cultivation and spraying for fungous diseases. Then in regard to correspondence we have quite a number of matters in connection with that branch of the work.

BULLETINS PREPARED BY THE HORTICULTURIST.

In regard to the reports and bulletins which have been issued, I should like to say, that during the last 11 years in which I have been horticulturist I have prepared the following bulletins: A bulletin on apple culture, giving directions for the culture of apples and the control of diseases, with a contribution from the late Dr Fletcher on the control of insects which attack the apple.

By Mr. Lewis:

Q. How many of these bulletins have been distributed?

A. I think about 60,000 were published in the first edition, and copies distributed to anyone who asked for them. I understand our mailing list is in the neighbourhood of 50,000.

Q. Have you any copies left?

A. Yes, there are some left.

By Mr. Martin (St. Mary's, Montreal):

Q. Were copies distributed in the two languages?

A. Yes.

By Mr. Owen:

Q. What was the date of publication?

A. The bulletin on apple culture was first published in 1901 but it was reprinted and revised in 1907.

Q. I should think one could get a few hundred of them?

A. I do not know that you could get a few hundred. We have been sending them out to individual applicants. The difficulty is that when they are asked for by the hundred they soon disappear.

Q. You must remember that you cannot send out too much of a good thing?

A. No, but the difficulty is that when the edition is limited some discretion must be shown.

Q. There should not be any limit to a good thing. That is the only way we have of reaching the farmer?

A. Yes. The next bulletin I would like to refer to is a bulletin which deals with plum culture somewhat at the same length as the apple bulletin, giving not only the result of many of our cultural experiments on the farm but a list of the best varieties for planting in different sections of the provinces of Ontario and Quebec. The same information was given in the apple bulletin.

By Mr. Lewis:

Q. What date is that?

A. The date of publication is July, 1903.

Q. At what time of the year do you distribute your bulletins?

A. As soon as they are available from the Printing Bureau. The next bulletin I might refer to is one on bush fruits, which covers the culture of the raspberry, the currant, the gooseberry and the blackberry. In this bulletin we have given cultural directions for all these fruits with the results of our experiments, lists of the best varieties, and also instructions how to control the different fungous diseases and insects which affect them. The date of this publication is April, 1907.

By Mr. Lewis:

Q. Are these bulletins numbered?

A. Yes. The next bulletin I might refer to is one on potato culture which gives the results of our experiments in the growing of the potato, also what we consider the best methods of culture for the potato, lists of the best varieties and also how to control fungous diseases and insects affecting the potato.

By Mr. Broder:

Q. What number is that?

A. This bulletin is No. 49.

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By Mr. Staples:

Q. Does that bulletin describe the best kind of machinery for handling potatoes on a large scale?

A. Yes. The next bulletin which I would like to refer to and which was issued recently is a list of herbaceous perennials which we have been growing in the Botanic Garden containing a list with descriptions of about 2,000 species and varieties. We have given short descriptions of flowers, the length of the blooming season, the height and the colour of the flowers and opposite them are stars—one, two or three as the case may be—representing the degrees of merit of these different varieties. This has been done with a large proportion of those listed.

By Mr. Staples:

Q. Are the same experiments going on at the western experimental farms?

A. Yes, somewhat the same but their publications are issued through the Central Experimental Farm, Ottawa.

By Mr. Broder:

Q. What is the number of this bulletin?

A. This is bulletin No. 5, second series.

By Mr. Staples:

Q. Does that contain the results of all the experiments that have taken place at the western experimental farms?

A. No, this is a catalogue of what we have on the farm here.

By Mr. Jameson (Digby):

Q. Is there a list available giving the number and the corresponding title of the bulletin?

A. Yes, that can be obtained on application. The one just referred to is the fifth bulletin, and then there is Bulletin No. 2, second series, which was published in 1899. I refer to the last because it was published jointly by Dr. Saunders and myself. It is called 'Catalogue of the Trees and Shrubs in the Arboretum and Botanic Garden.' Until the arboretum was established no one had much definite information as to what kind of trees and shrubs would succeed in Eastern Ontario and the province of Quebec, and which would be likely to succeed in other parts of the country; but we have gathered there one of the finest collections of trees and shrubs to be found on the American continent. I have personally visited the Arnold Arboretum in Boston, the Missouri Botanic Gardens and other places, and I believe we have one of the best collections on the continent. We have now tested over 3,000 species and varieties of trees and shrubs. Most of these are now under test at the farm, and in the bulletins just referred to we published information showing the degree of hardiness of most of the varieties, so that any one wishing to plant a certain species by consulting the bulletin will find out whether it will be likely to succeed or not.

By Mr. Smith (Stormont):

Q. What is the number of the last bulletin?

A. No 2, second series, published in June, 1899.

By Mr. Blain:

Q. Has each department a separate mailing list?

A. Each department has a separate list, a small mailing list of those who are especially interested. For instance, specialists will receive these publications. They are on a list but not a very large one; I think there are about 200 names on it.

By Mr. Martin (St. Mary's, Montreal):

Q. How have you obtained that list?

A. If any one writes to me at the Farm and asks to be sent the fruit publications, they go on my list. There are a few people who apply in that way but not a great many. Most people like to get all the publications. The bulletin on herbaceous perennials is only sent to individual applicants because it is thought there would only be a limited number of people interested in the publication and it would be better not to send it to everyone. That will give you some idea of the work involved in our reports and bulletins. As I said before, we have published 21 annual reports in connection with the Horticultural Division in which has been given from year to year the results of our experiments and the conclusions reached where we have arrived at any.

CORRESPONDENCE OF THE HORTICULTURAL DIVISION.

Passing on to the correspondence of the division, we have found an increasing interest every year in the work of the farm and our correspondence has been increasing in proportion. The farmers and fruit growers are beginning to look upon the farm as a bureau of information. I have a few letters here taken at random from recent correspondence, and I would like to read you a sentence or two from each, to give you an idea of the range of questions which we have to answer. By having this area of land on the farm devoted to experimental work we are able to answer these questions in a much more intelligent way than if we had not had practical experience of our own. Let me start with this letter first:

'I have 200 apple trees, half of them planted out last spring, the other half the year before. Last fall I noticed a gummy juice oozing out of the south side of the first year's planting. Is this sunscald? Anyway it seems to poison the trees causing those affected to die. Would wrapping the trees with wood veneer as soon now as I could get it be a means of saving those that are not now dead? Would you be kind enough to give me instructions as to how to go to work to save my trees?'

We were able to tell that man that he could save those trees which were not yet affected by shading the south and south west sides of the trees at once which would prevent the sun shining on that side and throwing them out. We have found that the constant thawing of trees on the south side breaks up the cells and the result is that side of the tree dies. At the experimental farm we protect thousands of trees every winter by wrapping around them paper or veneer to prevent this sun scald.

By Mr. Staples:

Q. That would only affect the tree at a certain age, would it not? When the tree gets older it would be able to stand that?

A. We have found sun-scald worse during the first three or four years of the tree's growth. After the tree becomes well established and the flow of sap healthy or normal we do not find it quite as much affected. After the tree begins to put on rough bark they are not very much affected.

By Mr. Wright:

Q. How would you detect that?

A. You very soon notice it. When the trees begin to grow in the spring, instead of that side of the trees being filled out with sap the bark shrinks and dries up and the south and south-west sides of the trunks of the trees would soon be dead without proper treatment. Very often the disease sets in before the wound in the affected tree heals over, and so the tree dies.

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By Mr. Owen:

Q. Would you recommend planting an orchard on the north of a slope?

A. Yes, it is very much better for that special reason. It does not matter so much farther south where the extremes of temperature are not so great in the spring season of the year. Where we have such a great range of temperature, as in some parts of Canada during the latter part of March and sometimes early in April which is very severe on trees, it is as well to take every precaution that we can. Here is another letter that we received:

'Some years ago I got some scions of the Americana varieties of plums from your farm which have just commenced to bear and although not as good as the European varieties yet I am very well pleased with them. Now the European and Japan varieties in this section are badly affected with black knot but the Americana varieties so far are entirely free from it. Two years ago I grafted some of the European varieties on the Americana varieties. They were top grafted. The grafts of the European varieties are completely covered with the black knot while the rest of the branches. Americana, are entirely clean and free from the pest.'

Another letter:

'I am mailing you today a sample of a seedling apple—I call it the 'Frontenac.' Kindly look it over and sample it and let me know what you think of it.'

In a case of that kind we take a full description of this apple on a blank we have, covering all parts of the fruit. We take into consideration the size, the shape, the colour, the length of stem, the depth of the basin and cavity, the character of the flesh and flavour and so on. We have a permanent record of that seedling because we don't know but what it may in time be advertised very extensively by nurserymen or it may be a variety that will be very valuable in the country, and we wish to have an accurate knowledge of it ourselves so as to place this before the people in advance. The next letter I want to quote is from British Columbia and I may say here that our correspondence with that province has been increasing very rapidly:

'I am writing you to see if you can give me any information regarding a block of sweet cherry trees 6 or 8 years old. Last year they were noticed to have a considerable dead wood in them. This year some trees are dead altogether. On digging around what is alive we find patches dead which are gradually spreading around the trunks. All the affected wood is under ground and below the grafts. If you would kindly let me know the cause of the same and remedies, if any, I would esteem it a favour.'

We have had quite a number of cases from British Columbia during the last few years where injury somewhat of that character has occurred with apple trees, cherry trees and other trees, and as far as I can make out it is due to late irrigation and late growth. We have had some experience here where our trees grew very well until the wet season set in and then too much sap accumulated in the trees. When a hard frost came that part of the tree in a very sappy condition suffered, the bark was often split or loosened and as a result the tree was badly injured.

By Mr. Owen:

Q. You mentioned nursery stock. There are a great many complaints of nursery stock that comes from the United States to Canada. It is treated before leaving that country for the San Jose scale and fumigated. The stock is fumigated again after arriving in Canada and the treatment being very severe many of the trees die after being set out?

A. Well so far as our experience goes, and we have imported trees from the United States from year to year for our experimental work, we have not found that to be the case. I believe such results are often due to carelessness on the part of someone else rather than to the treatment in the fumigation stations.

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Q. You think that young trees can stand the treatment twice?

A. Yes. I understand that some experiments are being conducted this spring, or were to be conducted this spring, by the Ontario Government to try and find out whether there was anything in this statement or not but so far as I know there is nothing in it.

Another communication I have is from the Canadian Horticulturist concerning replies to questions from one of their correspondents.

This gives you some idea of the correspondence that comes to us. It is gratifying sometimes to feel that one's efforts in this direction are appreciated because it is surprising how few people will acknowledge letters that are sent to them giving information. This is a letter from an Ontario man dated 25th February. He says:

'Your favour of 22nd re potatoes and onions and intensive culture of these bulbs, to hand. I write to you to tender my thanks for valuable information imparted in this letter. I scarcely expected an answer as I know you must have a vast amount of correspondence and could only attend to most important. I am experimenting to ascertain what possibilities there may be under intensive methods. Hence my questions re potatoes and onions. I shall put as a surface dressing about 2 inches of well rotted stable manure and I shall try seed sown in drills 8 inches apart and thinned 4 and 6 inches apart, and also sow plots 14 inches apart, thinned to 2 and 3 inches, and note results. I shall also try nitrate of soda on some plots as you advise. I have a vast amount of literature on horticultural subjects but the bulk of it is poor stuff, evidently written by people who have larger conceit than knowledge. I consider you the most reasonable and scientific of the whole bunch otherwise I should not have written you asking any questions.'

He mentions that he had a new variety of potato called French Monarch, and I told him that we would be very glad to try it. Gentlemen, that gives you a little idea of the kind of correspondence we have to deal with.

IDENTIFICATION OF VARIETIES OF FRUITS.

With regard to the identifying of varieties of fruits, we have found that since the Fruit Marks Act came into force some years ago, the number of specimens sent into us for identification has increased very much, because as you know, fruit growers are obliged to put on the closed packages the correct name of the apple they have packed, and it is very important for them if they have a variety to find out what it is, so that we have increasing number of specimens sent in to us for name. On the whole I think we have given fairly good satisfaction in naming fruits although it is not possible for any one person to know all of them. But having, as we have at the experimental farm, many hundreds of varieties of fruits we have a fair knowledge of them and if we do not know the variety ourselves we usually know someone to whom we can send it who is likely to grow that sort. The naming of fruits is a most interesting work because it tests one's knowledge and it affords the opportunity of finding out new sorts.

MEETINGS ATTENDED BY THE HORTICULTURIST.

Then each winter it is the work of the Horticulturist to attend any meetings which are authorized by the Hon. the Minister of Agriculture, and to give what information he can to people at such meetings. During the last few years I have attended most of the large provincial gatherings in Eastern Canada and given considerable information of value to the people. This year in addition to our regular work we attended the short course at the Agricultural Colleges at Guelph, St. Anne's and Truro, N.S., and took part in the proceedings with the other speakers for two or three days, and I think helped the work of those institutions.

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By Mr. Staples:

Q. Did you attend the short course in Manitoba Agricultural College?

A. No, not this year.

APPLES ORIGINATED IN THE HORTICULTURAL DIVISION, EXPERIMENTAL FARM, OTTAWA.

Now I should like to tell you a little about two or three lines of work which we are conducting at the farm which are proving of value, or if they have not demonstrated so far that they have been of value I believe they will in the very near future. The colder parts of Canada—and when I say in the colder parts of Canada I mean practically all Canada outside of the Annapolis Valley and adjacent parts of Nova Scotia, the warmer parts of Ontario and the warmer parts of British Columbia—over these vast areas in Nova Scotia, parts of Prince Edward Island, New Brunswick and Quebec, all eastern and central and northern Ontario, the great prairie sections and the colder parts of British Columbia, this climate is not suited to the kinds of fruits which have been recommended very often by people as being suitable for these sections of country. For instance, I refer to apples such as the Baldwin, the Spy, the Greening, the King and some other varieties. The reason is that these apples come from the country farther to the south, where there is a warmer climate, and are not suited to the climatic conditions such as we have in these vast areas of Canada which I have mentioned. Therefore, what we have been trying to do at Ottawa is to develop fruits which will be suitable to these parts of the country. For instance, we have got the McIntosh Red and these specimens of this variety on the table before me were grown at Ottawa. The McIntosh Red is an almost ideal apple as far as quality and appearance are concerned. But unfortunately it is not a long enough keeper, and that is a quality which is lacking in the fruit grown in these colder parts of the country. I have found as a result of our experiments and observations that late keeping apples are usually borne on late growing trees. It is very difficult indeed to get a late keeping apple and also a tree which will ripen its wood thoroughly where the temperature falls 20, 30 or 40 degrees below zero. It is very necessary to have a tree with a thoroughly ripened wood and for that reason it has been difficult to find such an apple in the country. But upon careful observation I find that we have a few varieties of apples which combine thorough maturing of tree with late keeping of fruit, which combine early maturing but late keeping fruit with early maturing of tree. I have brought, for example, this morning a variety called the Milwaukee apple. This apple is ready for use early in the winter but will keep all winter. It is a winter seedling of the Duchess and was not originated at Ottawa, but it gives you an example of what I wished to bring out. If any of you care to test it, you will find this apple is just as solid as any of the late keeping apples which are not ready to eat until after Christmas.

By Mr. Broder:

Q. Did you say it was a seedling of the Duchess?

A. Yes, a seedling of the Duchess produced in Wisconsin. This specimen was grown on the Experimental Farm in Ottawa.

By Mr. Lewis:

Q. On what kind of soil?

A. A sandy loam soil.

Q. Is there any connection between the keeping qualities of an apple and the class of soil upon which it has been raised?

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A. There is to some extent. A sandy loamy soil usually ripens fruit earlier in the season. But if you were to pick fruit at the same stage of ripeness on sandy loamy soil and on clay soil you would not find much difference in the keeping quality. On the sandy soils in some parts of the country the fruits mature too early but the keeping quality is more influenced by the climate and stage of maturing than the soil.

Q. Your experiments are all conducted on sandy soil?

A. On a sandy loam soil.

Q. You have no clay soil at the Experimental Farm.

A. There is no clay soil in the orchard there. In Eastern Ontario a clay soil is not found suitable for apple growing because it is too cold.

By Mr. Broder:

Q. Tile drainage would help it?

A. Tile drainage would help it but it does not warm the soil enough to make the trees thrive sufficiently and my observations, covering a good many years now, lead me to believe that the temperature of the soil in summer has a great deal to do with the success in growing fruits.

By Mr. Owen:

Q. Is the Milwaukee a hardy tree?

A. It is a very hardy tree. It fruits early and is proving a very desirable kind in Eastern Ontario. It just like the Duchess in quality, is acid but has little flavour. It is a splendid cooking apple and is relished by a good many people at this time of the year on that account.

By Mr. Sexsmith:

Q. Does it cling to the tree pretty well?

A. Pretty well.

Q. It has a short stem?

A. Yes, but it clings pretty well to the tree.

Q. How would it do in an ordinary orchard?

A. In a sod orchard it might possibly drop more but I am just bringing this out as an example of what we are trying to work out in regard to winter apples in Ottawa. In this variety we have an apple which matures early and will keep all winter and we have a number of varieties like that. I find that these winter apples which have originated in the colder parts of the country, like the Baxter, Scott Winter, Canada Baldwin and two or three others I might name, are apples which mature very early in the winter, keep all the winter and have a hardy tree.

Q. Are they early bearers?

A. The Scott winter is an early bearer. Finding we had a certain number of apples to work with we have been crossing these apples with such varieties as the McIntosh Red hoping to get a combination of the good keeping qualities of these later kinds with the better flavour of the McIntosh and combining that with a hardy tree.

By Mr. Blain:

Q. How long have you been experimenting with the Milwaukee?

A. Since 1895.

By Mr. Broder:

Q. You have the history of the McIntosh Red I suppose?

A. Yes, sir.

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Mr. BRODER.—I know the district very well where it originated and the man it was named after.

By Mr. Sexsmith:

Q. Have you experimented with the Ben Davis to try and improve its qualities?

A. No, the Ben Davis is not quite hardy enough at Ottawa and for that reason I have not worked with it as a parent. We have been combining quite a number of varieties in different ways. We have crossed the McIntosh sometimes using it as the male parent and sometimes as the female parent. We have used the Northern Spy as male and female parents and with the Duchess and with other varieties to try and combine hardiness with high quality.

By Hon. Mr. Fisher:

Q. How long has the Milwaukee been bearing?

A. Since 1898. We had a top graft of it at first but have had the trees growing since 1895.

By Mr. Martin (Wellington):

Q. After three years it commenced to bear?

A. Yes. First of all we got top grafts which bore fruit and then we also had trees of that variety, not our own trees but we bought trees. I am just pointing out the Milwaukee as an example, I am not strongly recommending it.

By Mr. Broder:

Q. It is a long keeper?

A. It is a good keeping apple.

Q. Of course, the Duchess is not a good keeper?

A. No. There is only a limited time in the spring for doing this cross breeding work and with many other duties to discharge it is impossible to spend much time at it. We are, therefore, carrying on another line of work in apples by growing seedlings from the best we produce. We have in our orchard about 2,000 apple seedlings, seedlings of the Northern Spy, seedlings of the McIntosh, of the Fameuse, of the Wealthy, of the St. Lawrence, of the Ontario, and a number of other kinds.

Q. Seedlings are harder than the grafted fruit?

A. Most of the seedlings are harder. We have found some remarkable results in the seedlings. A very large proportion of them are good marketable apples and I should like to give you for a very few moments the characteristics of 93 wealthy seedlings:

The Wealthy apple is such a well-known variety in North America and has proved itself so generally desirable that we have thought it would be useful and interesting to record at this time some of the characteristics of seedlings of the Wealthy fruited at the Central Experimental Farm.

In the year 1898, seed was saved from Wealthy fruit grown at Ottawa. No special selection was made of the fruit, though seed was not taken from poor or small fruit. The male parent or parents being unknown; but as the Wealthy trees grew near trees of the Duchess of Oldenburg it is probable that in some cases the Wealthy was pollenized by that variety, although from the fact that the Wealthy is self-fertile it is probable that a large proportion of the flowers were self-fertilized. The seeds were sown in the autumn of 1898. They germinated the following spring, and the trees were set out in nursery rows in the spring of 1899. In the spring of 1901 and 1902 there were 153, in all, of the best trees planted out. Most of these were planted 15 feet apart, but about one-third of them was planted 10 feet apart. Of the 153 trees set out only 11

have died or been winter killed and there have been some severe winters since they were planted.

By Mr. Owen:

Q. Nearly all of them are bearing?

A. The majority of them are bearing. Of the 142 remaining trees, 98 have fruited and it is interesting to note when these trees began to bear. One tree fruited in 1903, 5 years after sowing the seed; one tree fruited in 1904; 19 in 1905; 22 in 1906; 11 in 1907; 44 in 1908. Of these 98 seedlings, 93 have been described; descriptions have been made of good and bad alike. It is from the data available on our description blanks that the following results have been tabulated. Some of the outstanding characteristics of these Wealthy seedlings are: first, the hardiness of the trees, most of them appearing to be equal or superior to Wealthy in hardiness; second, their early bearing habit; third, their great productiveness; fourth, the very large proportion of seedlings bearing marketable fruit; fifth, the general resemblance to Wealthy in a large proportion of the seedlings, particularly in colour, and the rounded, regular outline of the fruit and character of flesh.

While fuller descriptions were taken, the characteristics given in this paper refer only to size, form, colour, acidity, quality, season and degree of resemblance to Wealthy. All the descriptions were made by the writer, hence, as near as possible, the same standard was followed throughout, but even so, the descriptions of the characteristics dealt with may not always be true as one's opinion in regard to acidity or flavour, for instance, may vary somewhat from one year to another. With the majority of the seedlings, however, the description taken one season has been confirmed or altered in a second season, and sometimes in a third season, in order that it might be as accurate as possible. The fruit of the Wealthy itself as grown at Ottawa may be described as medium to almost large on young trees; roundish, yellow well splashed and washed and sometimes completely covered with crimson; flesh yellowish, sometimes tinged with red, crisp, tender, juicy, briskly subacid with a pleasant aromatic flavour; quality good to very good; season late September, October and November.

In the following table are given the percentages of different characteristics, based on the descriptions of 93 seedlings:—

CHARACTERISTICS OF 93 WEALTHY APPLE SEEDLINGS.

| Size. | Per Cent. |
|--|-----------|
| Small (distinctly crablike—5.37) | 6.45 |
| Below medium. | 16.12 |
| Medium. | 40.86 |
| Above medium | 26.88 |
| Large | 9.67 |
| | <hr/> |
| | 99.98 |

Wealthy is medium to almost large.

| Form. | Per Cent. |
|-------------------|-----------|
| Oblate | 30.01 |
| Roundish. | 64.62 |
| Conical. | 2.15 |
| Oblong | 3.22 |
| | <hr/> |
| | 100.00 |

Wealthy is roundish.

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| Colour. | Per Cent. |
|--|-----------|
| Green or yellow | 0.00 |
| Splashed or washed with crimson and red. | 79.56 |
| Splashed or washed with pink or pinkish red | 5.37 |
| Splashed or washed with orange or orange red | 15.05 |

 99.98

| | |
|------------------------------|-------|
| Percentage dull red. | 21.50 |
|------------------------------|-------|

Wealthy is yellow, splashed and washed with crimson.

| Acidity. | Per cent. |
|--------------------------|-----------|
| Sweet. | 16.12 |
| Mildly subacid. | 1.07 |
| Subacid. | 34.40 |
| Briskly subacid. | 38.70 |
| Acid. | 9.67 |

 99.96

Wealthy is briskly subacid.

| Quality. | Per cent. |
|----------------------------|-----------|
| Below medium. | 4.30 |
| Medium. | 30.10 |
| Above medium. | 46.23 |
| Good. | 19.35 |
| Good to very good. | 0.00 |

 99.98

Wealthy is good to very good.

| Season. | Per cent. |
|--------------------------------|-----------|
| August-mid September. | 27.95 |
| Mid September-October. | 30.10 |
| October-November. | 23.65 |
| December-February. | 8.60 |
| December-April. | 9.67 |

 99.97

Wealthy is in season late September, October and November.

| Resemblance to Wealthy, more or less. | Per cent. |
|---------------------------------------|-----------|
| In outward appearance. | 62.22 |
| In flesh. | 45.55 |
| In flavour. | 14.44 |
| No resemblance. | 22.58 |

(Percentage in this case based on 90 seedlings).

| Marked resemblance to Wealthy. | Per cent. |
|--------------------------------|-----------|
| In appearance. | 21.11 |
| In flesh. | 14.44 |
| In flavour. | 3.33 |

| | |
|--|----------|
| In appearance and flesh.. . . . | 11.11 |
| In appearance, flavour and flesh.. . . . | 2.22 (*) |
| (Percentage in this case based on 90 seedlings). | |
| (*) Same season as Wealthy.. . . . | 1.11 |
| Later season than Wealthy.. . . . | 1.11 |

There are some interesting facts brought out in this table. Although Wealthy is said to have been grown from 'Cherry Crab Seed,' only 5.37 per cent of the seedlings, or six out of the ninety-three described was distinctly crab-like. The fact that 93½ per cent of the seedlings was large enough to be marketable is worthy of note. It is remarkable that not one of the seedlings was entirely green or yellow, all having more or less red. It is interesting to note that over 15 per cent was orange or orange red in colour. In this connection it may be stated that quite a number of the seedlings had the peculiar flavour of sops of wine or haas, which are of this colour and while the sops of wine and haas were in the same orchard with the Wealthy trees they were a considerable distance away. It will be noticed that over 16 per cent of the apples was sweet, while only 1 per cent was mildly sub-acid. There was over 65 per cent of the seedlings above medium and better in quality, which is a remarkably large proportion we think. Over 23 per cent of the seedlings was about the same season as Wealthy and over 18 per cent later, which is encouraging in the breeding of hardy winter apples. The large proportion of apples which bear more or less resemblance to Wealthy is worthy of note.

We are propagating the best of these Wealthy seedlings as well as seedlings from other varieties. My idea is to send these to a few people that I know are interested in trying experiments so as to get an unbiased opinion of their merits; because naturally the one who originates the variety is apt to think it is better than it really is and I think that we should, before saying much about the merits of these varieties, have them tested by other persons and have them fruit.

By Mr. Owen:

Q. How many acres did you say you had in orchard?

A. We have 27 acres of tree fruits.

Q. How often is that ploughed?

A. Ploughed every year.

Q. And fertilized every year?

A. Parts of it are fertilized but not all fertilized every year.

Q. When manures are not procurable what is the next best fertilizer? I suppose barnyard manure is the best?

A. We have not used commercial fertilizers in our orchard but where barnyard manure cannot be procured I have been recommending a cover crop of vetches or clover to supply the nitrogen and 200 pounds of ground bone and the same quantity of muriate of potash to supply the phosphoric acid and potash. That will return sufficient plant food to the soil to keep up the fertility.

Q. You would not recommend taking a crop off the soil in the orchard every year?

A. I would not except in some cases when the trees are quite small.

By Mr. Sexsmith:

Q. You say 200 pounds of ground bone to the acre?

A. Yes, it is not very much.

Q. No. You would not recommend seeding the orchard down?

A. No. There are some sections of the country where seeding down has not as injurious effects as in others; in fact in some places where there is too much moisture

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in the soil I believe seeding down is desirable because it will exhaust the soil moisture. In apple growing districts, however, I believe it is undesirable.

By Mr. Smith (Stormont):

Q. What about using wood ashes?

A. Wood ashes are very desirable if you can get them. Muriate of potash is recommended instead of wood ashes because the latter are not always available.

By Mr. Blain:

Q. In your bulletin do you give a simple explanation as to how to control the ordinary apple pests?

A. I think my bulletin on apple culture makes that very clear.

INDIVIDUALITY IN APPLE TREES.

There is one other line of work I would like to draw your attention to and that is individuality in apple trees. Now stockmen and poultrymen and specialists in live stock have devoted a good deal of attention to the question of individuality. Fruit growers, however, have not given to the subject that attention which they should. At the experimental farm we keep an accurate record of the yield of every bearing apple tree in our orchard so at the end of a period of 10 years we are able to tell just how much each individual tree has borne. We have the records now of the past 10 or 11 years and we find there is a remarkable difference in the yields of individual trees of the same variety planted on the same day. We are propagating the least productive, the most productive and propagating from the one that bears the most crop every year to find out if these characteristics are continued when we graft the tree. Although this may not be borne out, we want to find out whether it will or not; and I think if we demonstrate the fact that there is permanent individuality in trees it will be very valuable information for the country as then we can advocate strongly the propagation of trees from the most productive varieties. Now to give you a little idea of the variation. Out of fifteen trees of the Wealthy variety—I am giving you extreme cases because we are propagating from extreme cases, in ten years one yielded 154 gallons. If you divide that by twenty-four you will get the yield in barrels. Another tree which yielded the least fruit only gave 58½ gallons, a difference of 95½ gallons or nearly three times as much from the large bearing tree as from the other.

By Hon. Mr. Fisher:

Q. The same age?

A. The same age.

By Mr. Sexsmith:

Q. How old were those trees?

A. Those trees were planted in the year 1896.

Q. They have just produced that much apples?

A. That much apples. Now I will give you the results from older trees that have been planted for about 20 years. We have eight trees of the McMahan variety under test. It may not appeal to you gentlemen who come from the apple districts, but this is one of the best cooking apples grown and very hardy and very productive.

By Hon. Mr. Fisher:

Q. Is it a good keeper?

A. No, it is a fall apple ripening in October and November. Now here are the records of 8 trees for 11 years. One tree yielded 753½ gallons and the other 163

gallons, a difference of $590\frac{1}{2}$ gallons or $24\frac{1}{2}$ barrels, or an average for 11 years of over 2 barrels more per tree per year. At 40 trees per acre this would be 80 barrels more per acre per year and at \$1 per barrel for half of that quantity it would mean \$40 more per acre per year, a very respectable increase. Now take the record of 5 trees of the Patten Greening, a very hardy fall apple. One tree yielded $502\frac{1}{2}$ gallons and the other $230\frac{1}{2}$ gallons, a difference of 272 gallons or more than twice as great. In the case of the McIntosh Red we have only a couple of older trees for comparison, but the results have been that one tree has produced more than twice as much as the other, one bearing $501\frac{1}{2}$ gallons and the other $230\frac{1}{2}$ gallons, in eleven years.

By Mr. Sexsmith:

Q. Both equally good?

A. Both good strong trees, about the same kind of soil and grown near each other. These results are very striking and they appeal to me, as I think they must appeal to you, and although there may not be anything in it at all—it may be due to some local condition of the soil—yet the facts as borne out by different varieties of trees grown in different parts of the orchard seems to show there is something in it.

Q. I think a good deal depends upon the soil?

A. The soil may have something to do with it, of course.

I have not very much time left but I would like to refer to some breeding work with vegetables.

By Mr. Broder:

Q. Before you leave this subject does the result not depend upon whether the pollen reaches the tree or not? The wind might drive it in another direction?

A. That might affect it somewhat but not to that extent under the conditions in which these trees are growing. We are trying to find if this individuality is permanent in two ways, by root grafting and top-grafting. We have the least productive, the most productive and the uniform bearers all top-grafted on one stock, to find out what these will produce on the one stock.

EXPERIMENTS IN THE SELECTION OF TOMATOES.

We have been conducting some experiments with vegetables, because the vegetable part of our work is very important, but I have only time to refer to some experiments we have been carrying on with tomatoes during the last six years. We feel that all over Canada it is very desirable to develop the earliest strains of vegetables, that is for the great mass of the people, and for this reason we are working on early strains of tomatoes, beans, peas and corn. I should like to give you some figures with regard to tomatoes. For the last six years we have been selecting each year from the plant which bore the largest crop of the most uniform early fruit and from the plant which bore the largest crop without respect to earliness. The seed from one tomato from each of these selections was sown each year and the results are very marked. Let me take the results in 1908. The selection for uniformity and earliness gave a yield from forty plants up to August 18, at the rate of fifty-four bushels per acre. The selection for uniformity and productiveness gave a yield from forty plants up to August 18, at the rate of $27\frac{1}{2}$ bushels per acre. The total yield for the season from the plants that were selected for uniformity and earliness was 741 bushels per acre while in case of the plants selected for uniformity and productiveness the total yield for the season was 889 bushels, or an increase of yield by selecting for productiveness of about 20 per cent. The average date of the first ripe fruit of the forty plants we were selecting for earliness was July 27. In the case of the plants we were not selecting for earliness it was August 15. Thus you see that where selected for earliness the fruit

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ripened nineteen days earlier than where selected for productiveness and where selected for earliness the yield up to August 18, was about double that where selected for productiveness; but the total yield where selected for productiveness was about 20 per cent greater than where selected for earliness. I think that these results are striking and show that there is room for the production of Canadian grown vegetable seeds where it is practicable to do it on a commercial scale; and even where it is not practicable to do it on a commercial scale I believe every farmer should select, as far as he can, his own seed of the type he wishes to grow on his farm. In that way I believe he would soon make a wonderful difference both in his returns and in the kind of products that he has. As the time is nearly up I shall be very glad to answer any questions which you may have to put in regard to this work. I have only touched on a very few features of the work but I hope they have been of interest to you.

Perhaps it might be just as well to call your attention to a few of these apples at present displayed before me and which I brought here to show the remarkable difference in seedlings. I have here some seedlings of the Syawzie which is one of the most delicious apples we grow. Most of them have more or less of the peculiar aromatic flavour of the Swayzie but the general appearance of the progeny is quite distinct from the parent apple. We have some very promising specimens of these Swayzie seedlings and we are propagating them. Not only is the fruit larger and more marketable, but the trees are more vigorous. That is a remarkable thing. The Swayzie tree, as any of you know who grow it, is a poor grower whereas the seedlings are on the whole remarkably strong growers. Very few of the seedlings are russeted like Swayzie, most of them being larger apples without russetting.

By Hon. Mr. Fisher:

Q. Are they hardy?

A. Most of them are quite hardy.

By the Chairman:

Q. How do you treat the seed?

A. We find it best to plant them shortly after the ripening of the fruit. If we hold the seed over winter it becomes somewhat dry, and if there is a dry spring the seed will probably not germinate all that season. If the seed is sown when it is fairly moist it will germinate early in the spring and you will have a nice little plant of about 6 inches to start with. These are transplanted to the nursery rows and after a time put out in the orchard.

By Hon. Mr. Fisher:

Q. Have you been testing these seedlings any time?

A. Some of these seedlings we have been propagating for four years, the best of those which have fruited being perpetuated in this way.

By Mr. Sexsmith:

Q. Are they heavy bearers?

A. Not as heavy bearers as the Wealthy seedlings. Nearly all the Wealthy seedlings have the wonderful bearing habit of the parent. I might say that we have about 100 Northern Spy seedlings and out of that number only 7 or 8 have fruited although the seed was planted in 1898 showing that the light bearing habit of the Spy comes out in the seedling. I am glad to say that some of the seedlings of the Spy have proved of very good quality and if they turn out to be sufficiently productive it will be desirable to propagate them.

By Mr. Lewis:

Q. Have you any experience in regard to orchards taking a very long time before they come to bearing? For instance, in regard to Spies or Baldwins, some take 3 years longer than others.

A. There is a great difference in the time when trees come into bearing. Two varieties showing the extremes of early and late bearing habits are the Wealthy and the Spy.

Q. I was not speaking of that. I had in mind the fact that a number of orchards on the shores of Lake Huron take two or three years longer coming into bearing than others farther back?

A. We find that trees which are growing very fast will not bear so quickly as those which are only growing at a moderate rate; and sometimes they will bloom but not set fruit, the fruit buds do not seem to have been nourished or matured sufficiently.

Q. The trees that I refer to are strong healthy trees and there are probably 500 of them?

A. That occurs in cherry trees more than apple trees. You find young cherry trees which are of very strong growth and blooming well but evidently the fruit buds are not sufficiently nourished to develop the fruit from them.

By Hon. Mr. Fisher:

Q. The strong growth is evidently due to rich soil?

A. Probably it is the rich soil and the moisture.

By the Chairman:

Q. Have you noticed any earlier bearing by trimming back?

A. Yes, by summer pruning. We do not recommend summer pruning, it is not a very practicable method with us but if you have lots of time you can do it. If you prune too much you injure your tree. In England many people have their gardeners who can give the necessary time to pruning.

GROWING OF CEDAR AND HEMLOCK HEDGES FROM SEED.

By Mr. Lewis:

Q. I would like to ask how you grow cedar and hemlock trees from seed. Through our country on a great many farms there are evergreen hedges extending from the highway up to the door of the dwelling?

A. The plan is to get the cones in the late autumn, to spread them out in a dry room on paper and the seed will drop out. It is collected and kept dry until the spring. In the spring it is sown broadcast on the bed. We find it desirable to enclose the bed with pieces of board because the seed is protected better. Cover the seeds lightly with sandy loam soil, pack it down with a mallet and then shade the bed with laths so that the sun will not fall directly on it. The seeds will germinate during the spring. We find the most critical time in the growing of these evergreens is just when the seedlings are coming through the ground and the hot sun scalds them. In their native haunts they start up in the shade and so you have got to give them that. Have your laths perhaps a foot and a half up from the bed so as to permit the circulation of air. The laths should be the width of themselves apart and made into a frame. The young plants are grown two seasons in the beds when they are transplanted to nursery rows.

By Mr. Broder:

Q. You might put the seeds under a tree?

A. They need moisture to germinate and if put under a tree they might not get it.

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By Mr. Hodgins:

Q. When is the proper season to trim the cedar hedge?

A. In the month of July is the best time.

Q. Do you approve of cutting them square on top?

A. I believe in having them wider at the bottom than at the top. At the experimental farm we started our hedges with a rounded top, but I do not believe now that that was the best method for the reason that the lower parts are shaded from the direct rays of the sun by the overhanging top and they are beginning to go. The idea is to have them a little wider at the base than at the top so that the sun will shine on the base otherwise the hedges may die off at the base.

Hon. Mr. Fisher:

Q. Really the natural shape of the tree?

A. Yes, nearly the natural shape of the tree as far as being broad at the base and narrow at the top is concerned.

Q. What time would you prune spruce?

A. The latter part of June or early in July after the greater part of the growth has been made. I believe it is most satisfactory to have it pruned so as to have as long a period as possible with a neat hedge. By pruning in late June or early in July one will have a nice clean hedge all the rest of the summer. It will also be neat through the winter and the spring up to the time when growth is made; that is the theory I have worked on and it has operated very well in practice.

By Mr. Hodgins:

Q. Speaking of apples what variety would you recommend as the most profitable to grow in the Ottawa valley.

A. The Wealthy and the McIntosh. The McIntosh apple though is just doubtfully hardy in the Ottawa Valley about Ottawa. It is all right at certain places in the Ottawa Valley but speaking generally of this district it is doubtfully hardy. I would not be at all surprised if some year we will get a test winter that will badly injure the McIntosh. Therefore, I would like to tender a word of caution.

Q. Then for the Pontiac District it would not be available?

A. No. The leaves of McIntosh stay on until late in the autumn and when you see that you may know the wood of the tree is not as ripe as it should be.

By Mr. Smith (Stormont):

Q. It is all right along the St. Lawrence?

A. Yes, the McIntosh grows well between Brockville and Cornwall, and in fact east and west of those points for a long distance.

By Mr. Barr:

Q. And Western Ontario would be all right?

A. Yes.

By Mr. Smith (Stormont):

Q. Do you consider the McIntosh the most profitable apple for the farmers in that district?

A. I do consider it so but I would like to qualify that by saying we have found the McIntosh apple to be self-sterile, that is, its own pollen will not fertilize the flowers properly. If a solid block of McIntosh trees are planted without any other varieties around, as I fear a number of fruit growers are now doing owing to its popularity, the crop will not be nearly so good, in fact it will be liable to be light.

By Mr. Sexsmith:

Q. The Spy, too?

A. The Spy is also. One reason why the Wealthy is such a heavy bearer is because it is self-fertile. The reason why the McIntosh is such a poor bearer is because it is more or less self-sterile.

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ERADICATION OF THE OYSTER SHELL BARK LOUSE.

By the Chairman:

Q. Are you doing anything for the eradication of the oyster shell bark louse?

A. Yes. Ten or eleven years ago the orchards at the farm were pretty badly infested with the pest and we tried some experiments to get rid of it. We found that by spraying the trees with lime wash we were able to eradicate most of it, but it is necessary to do the work in the autumn not in the spring. We found that with two applications of freshly slaked lime, one application being put on when the other became dry so as to coat the tree from top to bottom, the caustic nature of the lime cut away the covering which enclosed the eggs of the bark louse and loosened it from the tree and then during the winter the changes of temperature, the freezing and thawing, and then in the spring the rains and wind, simply cleaned the scales off the tree before the eggs hatched in the latter part of May. We found that worked very satisfactorily, but it has to be done in the fall, because, as I explained, it is a purely mechanical thing; simply loosening the scales on the trees by destroying the material which held them there.

By Mr. Broder:

Q. I had some trouble and I used a weak lime wash and soap mixed with water?

A. We tried that, but it had no effect. Did you find it effective?

Q. It did very well, but it was not a cure?

A. We have not found it satisfactory.

Q. We had the successful experience of one man who washed his orchards with soap suds two or three times during the summer?

A. That is a very good thing, but the lime wash we have found most satisfactory.

By the Chairman:

Q. Have you tried sulphur?

A. No, we have not tried sulphur ourselves. In Western Ontario they have tried sulphur for the bark louse, but it does not give as satisfactory results as we have had with the lime wash.

By Mr. Broder:

Q. It will spread rapidly in orchards?

A. Under some conditions it will spread rapidly but there are parasites of the bark louse that keep it down and sometimes after an infestation you will find that in a few years it is almost gone having been eaten into by these parasites. It is usually stunted trees in sod ground that become affected, although not always, and, therefore, it is wise to keep the orchards in good cultivation to prevent it.

MR. BRODER.—It is just like a vigorous man being able to throw off disease.

THE CHAIRMAN.—I am sure we are greatly indebted to Mr. Macoun for the able address and the interesting results of his experiments with which he has favoured us this morning. It shows the very wide field which is open for the development of the apple industry. The results of Mr. Macoun's experiments have been to me a revelation and I am sure that the work he is carrying on must tend to develop our apple industry, in a way that we have not heretofore anticipated, in the northern or cooler sections of country.

Having read over the foregoing transcript of my evidence, I testify the same to be correct.

W. T. MACOUN,
Horticulturist.

THE FRENCH CANADIAN HORSE

HOUSE OF COMMONS,
COMMITTEE ROOM No. 34,
WEDNESDAY, March 17, 1909.

The Select Standing Committee on Agriculture and Colonization met here today at 11 o'clock, Mr. Schell, chairman, presiding.

The CHAIRMAN.—We are this morning to hear an address from Mr. J. G. Rutherford, Veterinary Director General and Live Stock Commissioner, on 'The French Canadian Horse.'

DESCRIPTION OF TYPICAL ANIMAL.

Dr. RUTHERFORD.—The French Canadian is described by those who knew him prior to the great variation in type which, owing to the introduction of other blood, has been brought about within the last thirty years, as an animal of Norman French descent, although of more or less mixed breeding, standing generally but little over fifteen hands high and weighing from nine to eleven hundred pounds. The head is broad and courageous looking, perhaps somewhat coarse, with the ears far apart, the neck thick, the frame stout, the breast full, the shoulders strong, even rather upright, the back rather long than short and sides inclined to flatness, the croup rather round or fleshy with quarters short and somewhat drooping, the muscles well let down and the tendons large, the feet tough and almost immune from disease. Mr. Barnard of Sherbrooke, Que., who perhaps knew the old breed of French Canadian horses as well as any one who has written of them, ascribes the shagginess or abundance of hair on the mane and tail and on the legs which are characteristics of the breed, to the severity of the climate, and suggests that under good cultivation these characteristics would probably disappear long before any change would be perceived in the innate excellencies and peculiarities of the breed.

The French Canadian horse is of no fixed colour and although a good mover with high and perhaps rather forced action, is not inclined to maintain great speed for any length of time although there have been, and are some remarkable exceptions to this rule.

Even though less given to style and showing perhaps less ambition than the Morgan and some of his other relatives, who it may be said in passing, benefited much from the strain of his blood which they undoubtedly acquired, the French Canadian was no whit inferior to any of them or perhaps to any horse of his weight, in strength and endurance. His hardiness and ability to thrive under the most adverse conditions were notable characteristics. Taking him altogether, he was a remarkable little horse, eminently suited for the needs of the habitant, well capable of performing the light agricultural work of the small Canadian farm under the old regime and equally well adapted to the roads of Quebec, which even to this day, especially during the winter season, deemed the employment of a light and active horse, capable of negotiating deep pitch holes and deeper snow drifts, which would bring to grief many animals of more weight and greater pretensions.

I have here in the Report of the Ontario Agricultural Commission of 1881 about the only decent picture of the French Canadian horse which I have been able to find

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anywhere. I think it might be passed around among the members of the committee. There is nothing in the book that is germane to the subject except the picture.

While, as above stated, some allege that many different strains were commingled to produce him, the fact remains undisputed that the basic blood of the breed was of the best then available. The following quotation from a recent able report by Dr. J. A. Couture contains facts of great interest:—

‘All of these animals were descended from those sent out from France in the early days of the Colony. Louis XIV who liked to do things in a grand way, had instructed his Minister Colbert, himself very eager to see the Colony flourish, to send here only the best animals of the kingdom.

‘Thus on the 16th of July 1655 there were sent to us twenty mares and two stallions from the Royal stables, (unfortunately eight of the mares died during the voyage). Others were sent us in 1667, including a stallion and two mares for the Ursulines. In 1670 eleven mares and a stallion were landed in Quebec; other shipments followed.’

‘These horses which remained the King’s property for three years, were distributed among the gentlemen of the country who had done most to promote colonization and cultivation.’

In these early days the symmetry and quality which characterise our modern improved breeds were practically unknown so that it is perhaps scarcely fair to attribute the faults or rather peculiarities of conformation, which in our day and that of our fathers have been characteristic of the breed, to want of care or judgment in selection on the part of their breeders, although it is altogether likely that these also had their effect in intensifying the marked peculiarities already mentioned.

There can be no doubt, in view of the evidence adduced that the hardihood and endurance of the French Canadian horse were derived from the same source as the like attributes in the Thoroughbred, namely the Eastern blood, Arab, Turk or Barb, to which all our modern breeds of light horses owe their best qualities.

IDENTITY OF THE BREED ALMOST DESTROYED.

From the above description, it must I think be admitted, that the French Canadian breed of horses was well worthy of preservation and that with care in selection, the development of good, the elimination of bad qualities, and the general improvement which might reasonably have been expected under present day conditions, it would, had no adverse circumstances intervened, have been by this time an exceedingly valuable addition to the light horse stock of the Dominion. As has been well pointed out on more than one occasion by Dr. Couture, to whom perhaps, more than to any other man in Quebec is due the present revival of the French Canadian horse, as well as that of the French Canadian cow, a very grave mistake was made thirty years ago by well meaning but short sighted live stock reformers, who, by the introduction of stallions of many different breeds, succeeded in almost entirely destroying the identity of the native strain, and substituting for it the nondescript mongrel now far too frequently found in the stables of our French Canadian fellow citizens.

There are many of us in this room today, myself among the number, though I have been but little over thirty years in Canada, who will recollect the French Canadian horse as he was before the introduction of these foreign sires, and it will be generally admitted that, though now he is seldom seen, he was an infinitely more attractive and valuable animal than the great majority of those who have usurped his place. Every credit is therefore due to those who, actuated by no mercenary but by patriotic motives, have been endeavouring to preserve and perpetuate this ancient and historic breed, and although some mistakes and errors of judgment have undoubtedly been committed, I think, keeping in mind the object they had in view, we should be ‘to their faults a little blind and to their virtues very kind.’

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ESTABLISHMENT OF FRENCH CANADIAN STUD BOOK.

The first step towards the preservation of the original strain was taken in 1885 when as the result of an agitation commenced by Dr. Couture, the Honourable Dr. Ross, then Prime Minister of Quebec, established among other records a French Canadian Stud Book, this being formally opened on December 16, 1886. Its management, as well as that of the French Canadian Herd Book, was entrusted to a Commission composed of M. J. A. Lesage, the Assistant Commissioner of Agriculture and four other gentlemen, namely Dr. J. A. Couture, and Messrs. Casavant, Barnard and McEachran.

FORMATION OF FRENCH CANADIAN HORSE BREEDER'S ASSOCIATION.

The work made but little progress until 1895 when the French Canadian Horse Breeders' Association was formed and the work of inspection inaugurated. Between 1895 and 1905, eighteen hundred and one (1801) animals were registered, of which six hundred and twenty-eight (628) were males and eleven hundred and seventy-three (1173) were females. The work progressed in spite of difficulties and drawbacks with more or less success until the year 1904, when as the result of the movement for the establishment of the National Records, the various live stock associations of Quebec surrendered, to some extent, their individuality, and became part and parcel of the new system.

It was not however until after I assumed office as Live Stock Commissioner, in July, 1906, that this new chapter in the history of the Quebec records was really opened. I found on taking charge that our French Canadian breeders, although nearly two years had elapsed, were still to a large extent in outer darkness, and that though a majority of the swine and some few sheep had been recorded, nothing whatever had been done in the way of registering either horses or cattle, while an overwhelming majority of the sheep of Quebec had also been, through one technicality or another, debarred from participating in the benefits of the new order of things. As can readily be imagined, considerable dissatisfaction existed over this state of affairs, inasmuch as a large number of breeders had two seasons' produce unregistered, while the outlook from their point of view was anything but reassuring. It took but a short time to adjust matters as far as the French Canadian Herd Book was concerned and registration of cattle was soon in progress. The sheep question was much more difficult owing to the fact that the standard of registration in Quebec differed considerably from that adopted by the breeders of Ontario, who were naturally, from their business relations, in close touch with the various American Records. The sheep difficulties were however eventually overcome and although a few flocks, either palpably underbred or the registration of whose ancestors had been neglected, were disqualified, the majority were found eligible for registration, and the situation being loyally accepted, the irritation disappeared.

An examination of the record maintained by the French Canadian Horse Breeders' Association revealed the fact that although the organization had apparently started well and had during the first years of its existence maintained a fairly uniform and strict standard of registration, the same could scarcely be said with justice of the years immediately preceding its merger in the National Records. It was evident that more or less carelessness had occurred in the inspection of horses and their acceptance for registration, the result being that many of the animals entered in the Stud Book were anything but eligible either from the view point of genealogy or from that of conformation. Those facts having been brought to the attention of the Minister, steps were immediately taken under his authority with a view of bringing about a more satisfactory state of affairs. The necessity for a change in the existing standard and a general stiffening up of the Stud Book were first brought to the attention of the Association by means of correspondence and subsequently at the annual meeting of the Association held at Montreal in February, 1907, where the Minister discussed the whole

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question with the officers and members. It was then decided to establish a new record, having a fixed and definite standard of qualification and entry, which could only be accorded to such animals as were found eligible after inspection by a special Commission composed of four gentlemen familiar with the breed, two of whom were to represent the Association and two the Department of Agriculture. Those representing the Association were Dr. Couture of Quebec, and M. Arsene Denis of St. Nobert, while the Minister named on behalf of the Department, Mr. Robert Ness of Howick, and Mr. Louis Lavallee, of St. Guillaume d'Upton. Dr. J. H. Vigneau of Three Rivers, one of the official inspectors of the Department was delegated to examine the animals for hereditary unsoundness and also to act as general secretary to the Commission.

STANDARD OF REGISTRATION.

The standard agreed upon is as nearly as possible that of the old French Canadian horse which I have already roughly described. Stallions must not exceed in height 15.3 and mares 15.2. The weight preferred is for stallions between eleven hundred and thirteen hundred and fifty pounds, for mares from ten hundred and fifty to twelve hundred and fifty pounds.

Up to date 2,528 horses have been presented to the Commission for inspection, of which 470 had been registered in the old book. Of these, nine hundred and sixty-nine, (134 males and 835 females) of which one hundred and twenty-five had been previously registered, were accepted for entry in the new record. It will thus be seen that 345 animals which had been in the old stud book were refused entry to the new.

The understanding reached at the annual meeting in 1907 was that registration, except for horses the progeny of unregistered sires or unregistered dams not sufficiently matured to allow the Commission to form a correct opinion as to the height, weight or conformation, was to cease on December 31st, 1908, but although every effort was made to cover the ground before that date there still remain a few horses to be examined in Bonaventure, Gaspé, and Isle aux Coudres, as also a number in the provinces of Ontario and four or five in Manitoba and Alberta. Those animals as also the youngsters already referred to, will be inspected during the current year, after which the stud book will be definitely closed unless it is decided to admit a few selected stallions of other light breeds with a view to improving and fixing the type. This step however is one which will only be taken, if at all, with the full approval and consent of the members of the Association.

Meanwhile, as a further encouragement to the breed, the Minister, through the Live Stock Branch of his Department, has authorized the offering of prizes for stallions and mares registered in the new record, and as a result of this action there appeared last year at St. Johns, Quebec, over one hundred and twenty high class representatives of the breed. The exhibition on this occasion was most striking and one which evoked much enthusiasm among the spectators.

DIFFICULTY LIKELY IN RESUSCITATION OF OLD FRENCH CANADIAN HORSE.

It may be said that owing to the lack of line breeding and the diversity of type in the foundation stock now available for registration, considerable difficulty is likely to be experienced in resuscitating the old French Canadian horse. This is to some extent true and it must be admitted that the task of bringing back the breed in its original purity and with all its original characteristics, is perhaps somewhat beyond the compass of the present organization. On the other hand the history of the development of most of our modern breeds of horses, as well as of other animals, indicates clearly that it is possible by intelligent selection and careful mating to establish in a comparatively few generations a fixed type, capable as a rule of perpetuating itself, although of course, subject from time to time to atavistic variations.

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There is thus, heretofore, every ground for the hope that the French Canadian horse which we are now trying to establish, will be, if not absolutely identical with his early progenitors, at least as good and possibly, although our friends from Quebec may have difficulty in believing it, very much better.

By Mr. Owen:

Q. Was there not at one time a horse called the St. Lawrence horse in the province of Quebec?

A. Yes.

Q. It was mated with the French Canadian?

A. Yes.

Q. Are those horses extinct now?

A. Yes, I fancy so. There are a great many of them in the Morgan book you know.

By Mr. Currie (North Simcoe):

Q. Is there not a family known as the St. Hilaire?

A. Yes.

Q. Black and a little heavier than the French Canadian horse?

A. Those are practically extinct.

VALUE OF FRENCH CANADIAN HORSE IN CROSSING WITH OTHER BREEDS.

By Mr. Miller:

Q. I would like to ask some questions as to the value of the French Canadian horse in crossing with other breeds. First, what would you think of the value of a French Canadian mare to be bred to a standard bred sire. Second, what would be the advisability and what would be the result of breeding from a French Canadian male pure bred sire, and the third place, breeding from an Arab sire?

A. The French Canadian mare and the French Canadian horse have already demonstrated, with reference to the American standard bred trotter, the excellence of their qualities. Some of the best and most fashionable strains of the American standard bred trotter trace directly back to the French Canadian horse. The same is also true of the Morgan, and I think that while perhaps the theory of extreme speed on which the breeding of the American standard bred has been perhaps too much based might not be strengthened by the introduction of French Canadian blood, the endurance, the courage, the symmetry and the soundness, as regards the legs and feet of the trotter would be greatly increased. With reference to the use of the thoroughbred horse I can scarcely speak without prejudice. I myself am a very strong and devout believer in the advantage of thoroughbred blood judiciously infused into all our breeds of light legged horses. I look upon a thoroughbred, as in fact I hinted in the paper I have just read, as having the best of all the good qualities of all the light legged horses that we know anything about at the present time, and, therefore, I would think a judicious mixture of thoroughbred blood would be beneficial to the French Canadian. Of course, the thoroughbred as a race horse would not be benefited by the introduction of French Canadian blood but on the other hand the opposite would be true.

Q. What would you be likely to get with that cross, good saddle horses and hacks?

A. Yes, I think so. The thoroughbred horse, provided he is good, bred on proper lines and capable of transmitting his characteristics, will get a good horse from almost any kind of light legged mare. The Arab I don't know quite so much about. The Arab is a very symmetrical little horse and improves the conformation of almost any breed with which he is crossed; but he is deficient in size and he is not at the present day—although he is the progenitor of the English race horse,—nearly as fast, has not

as much endurance and has not nearly as many good qualities, as his descendant, the thoroughbred. So I would be rather chary of recommending the introduction of Arab blood to any of our light legged breeds although I know it is advocated by a great many people.

OBJECT IN LIMITING WEIGHT OF FRENCH CANADIAN HORSES FOR REGISTRATION.

By Mr. Wright:

Q. Why do you limit the registration of French Canadian horses to a certain weight?

A. The custom is followed not only in regard to French Canadian horses, but to other breeds as well. The Hackney horse in England is limited in the same way and it is about the same size. It is to discourage the almost universal tendency on the part of breeders to increase the size of horses. You keep on increasing the size until you get a horse which is altogether different from what you started out to get. Then you lose your uniformity of type and you get away from the original breed entirely. That is the case with the Hackney. A large number of Hackney breeders have been breeding too big. Their standard is 15.3 for stallions and when they get a horse over 16 hands, 16.1 and sometimes up to 16.2, it is not a Hackney at all but a great big coach horse entirely different from what the breed originally was supposed to be. I have an illustration here which will show the necessity of doing what the Department and the Association have been doing in Quebec in the way of stiffening up the Stud Book and looking after our registration and this also has some bearing on the size. I happened to be up the Gatineau one Sunday afternoon a couple of years ago and I found this (holding a poster up to view.) Having been brought up in Scotland I did not take it away without leave but I asked the owner of the building on which it was posted for it. He gave it to me and I brought it home with even more pride than he displayed in making me a present of it. The pedigree of the horse described in this poster is very instructive

"FRENCH CANADIAN STALLION KING JOHN.

KING JOHN.

'Is dapple grey in color with heavy mane 4 feet long and good tail. Stands fifteen and a half hands high, weighs about fifteen hundred pounds, good action. His sire was bred by John Montgomery Campstownend, Twynholm, Kircudbright, Scotland. Sire Tinwald (1544) vol. 3. Dam Lovely II (1500) vol. 5 sire of Dam Monkland Farmer (543) vol. I; grand dam Lovely of Banks (266) vol. II; sire of grand dam, Lockfergus, Champion (449) vol. I; Great Grand Dam, Solly by Lothian Tam 506."

I don't think we could get a better illustration than this bill affords of the need of doing something to try and preserve the purity of our French Canadian horses.

UTILITY OF THE FRENCH CANADIAN HORSE.

By Mr. Currie (North Simcoe):

Q. What type of utility do you consider the French Canadian horse would fill, what would be the particular utility of this type of horse apart altogether from the consideration of breeding to a type?

A. That is a very important question and one which is perhaps a little difficult to answer. I think that he would make an excellent roadster. He was always a strong, thick, stout horse and he would, therefore, in my opinion be a very good horse for general purpose use on small farms.

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By Mr. Staples:

Q. Why limit it to small farms, Doctor?

A. Because on the larger farms they generally prefer a larger horse, one with more weight, as there is heavier and more work to be done. The French Canadian horse would have in my opinion more endurance, more toughness than the Hackney horse. The Hackney horse while a very showy and very handsome animal with great conformation as bred at the present day, in too many instances is deficient in staying power. The old French Canadian strain if properly adjusted and assimilated with the blood of other breeds would give that staying power which the Hackney horse to some extent lacks. We would also have a better conformation than prevails amongst the American standard breeds and we would have a much handsomer horse. Very fortunately now they are beginning to pay a little attention to the breeding but up to the present time they have devoted their attention almost entirely to the production of speed.

Mr. CURRIE.—Too much.

Dr. RUTHERFORD.—Conformation, soundness and substance have been lost sight of. All these things should be carefully looked for in this breed which we are trying to reinstate in the province of Quebec. The question you asked is perhaps the most important one that could be submitted here to-day, viz., what after all is the object in trying to bring back this breed or improve upon it?

By Hon. Mr. Douglas:

Q. Would it not be a first class horse for the delivery of goods in city streets?

A. That is a rather plebeian occupation which is generally filled by the inferior specimens. I was speaking only of the best specimens bred.

By Mr. Currie (North Simcoe)

Q. What would you say as to the employment of the French Canadian horse for military purposes, for instance for artillery?

A. He would be too light a horse almost for artillery purposes. He might do very well for what they call horse artillery but for the ordinary field guns he would be a little on the light side. However, these horses make very useful remounts for cavalry purposes, especially with a little admixture of thoroughbred. There is no reason why this horse should not be bred and extensively used for cavalry purposes. They would also make good mounted infantry ponies.

By Mr. Wright:

Q. Is the French Canadian horse used very much in the other provinces?

A. We have not any horse in the other provinces which is very much like the French Canadian. He is perhaps nearer to a cross between a thoroughbred and a standard bred than any other but even those would be of different blood. They would be higher and perhaps leggier, less blocky and not so stout.

By Mr. Meigs:

Q. Could you give us the pedigree of the French Canadian horse?

A. I have just given it to you.

By Mr. Thornton:

Q. Is the French Canadian horse a good feeder?

A. Yes, a very good feeder, very hearty. In fact history records that in the early days the French Canadians bred so many horses that they ate up all the provender in the province and there was nothing left for the cattle and sheep.

Q. He would not take so much feed as a heavy horse?

A. No, nothing like it.

By Mr. Smith (Middlesex)

Q. The French Canadian horse is the best general purpose horse raised in Canada?

A. Yes, I think so.

Q. He fills that position to a very much greater extent than any other?

A. Yes.

By Mr. Thornton:

Q. On our sandy land he would be the most profitable horse for the average farmer?

A. That is for the actual work of the farm.

Q. Yes?

A. Of course, the average farmer nowadays is figuring on selling a colt now and then and many of them for that reason prefer to breed to heavier horses.

Q. Yes, but for the farm work itself?

A. For the work itself I think he is admirably adapted especially on such soil as you mentioned.

SPEED OF THE FRENCH CANADIAN HORSE.

By Mr. Miller:

Q. Is the French Canadian horse speedy enough as an ordinary driver?

A. Yes, he is a horse that will go along very nicely. As a rule he has not got extreme speed and even when he has a good deal of speed he does not care to keep it up for any great distance; he prefers a reasonable gait. He will go on all day but does not care to keep up extreme speed. I think perhaps that is owing to the fact that his action, as I said in my address, is rather forced. He is often a high stepper but rather forces his action.

Hon. Mr. FISHER.—I would like to say that I have frequently known the French Canadian horse to go from 12 to 14 miles an hour for 2 or 3 hours in a day without any trouble.

By Mr. Currie (North Simcoe):

Q. The reason I asked you about the utility of the French Canadian horse for military purposes was that I saw on one occasion several teams of French Canadian horses that the Royal Canadian Artillery had. They were heavier horses than those outlined in your address. I never saw such magnificent teams in my life. I understand these horses went all through the South African war and came back home safe and sound?

A. Yes.

Q. I don't know whether you have heard or know anything about that. The horses I speak of weighed possibly from 1,450 to 1,500 pounds, they were a little heavier than the type you mentioned. These horses are very handy.

A. Probably they had a cross of French Canadian blood.

Q. The horses I speak of were black with a curly mane and tail?

A. They would be a cross with French Canadian blood. A great many of the horses that we know now in Canada as French Canadians are really a cross between either the Clydesdale or the Percheron and the old French Canadian blood.

Mr. OWEN.—Judging from the description given by the Hon. Minister of Agriculture the French Canadian horse must possess quite a bit of speed. I am a great lover of horses and when I get a hold of a horse that can travel 14 miles an hour I

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consider him a crackerjack as a roadster. However, such horses are very few and far between.

By Mr. Hunt:

Q. How are these horses registered? Are they put as being of a certain breed?

A. A good deal of attention is paid to the breeding, to the genealogy, and the owners who present them for registration are questioned very closely as to their breeding. But it is quite impossible to depend entirely upon the spoken statements of these men, and it being impossible to trace back the breeding, or verify it in any way, as a matter of fact they are largely accepted on their conformation alone.

By Mr. Sexsmith:

Q. Are there any of these thoroughbred stallions in the province of Ontario now?

A. You mean the pure bred French Canadian stallions? There are a few but they have not been re-inspected yet. We intend to have another inspection next month and no doubt a large proportion of them will be thrown out of the new stud book. I would not like to make any promise as to any of these horses now in the province of Ontario being accepted by the members of the Commission.

By Mr. Wright:

Q. Is there any such system in regard to the other breeds? Generally in the registration of live stock there are the pure bred sire and the pure bred dam to qualify for registration in the stud book without any inspection?

Hon. Mr. FISHER.—I think every other book is closed for foundation stock. I do not think there is any other book except the French Canadian book which is still open for what is called foundation stock. Where the books are closed for foundation stock it is only the progeny of the registered animals that can be registered.

Mr. WRIGHT.—But can all the progeny be registered, no matter what they may be?

GOVERNMENT INSPECTION.

Hon. Mr. FISHER.—Oh, yes, there is no system of inspection by the government; that would be a matter for the association to discuss. This is a case where the old French Canadian book maintained in the province of Quebec was examined and before we could, on the part of the Department of Agriculture, put our stamp on the animals registered, or rather on the certificates which we now do in the case of the national records of Canada, we felt that we ought to go over the animals and reconsider them and for that purpose this system of inspection was established. In making that inspection there were a large number of animals which the owners had not registered in the old stud-book, but which they still claimed were French Canadian horses of the best stamp. We, therefore, advertised that any body that would bring up horses for examination by this commission would be entitled to that examination, and, if they passed, to registration. That was to be done for a certain limited period and when that period is passed the books will be closed and no new blood will be permitted entry. The suggestion has been made that the breed would be benefited, and perhaps made better in every respect, if a system of allowing the infusion of some out-crosses of selected stallions might be permitted. That is a subject which is now under consideration by the French Canadian Horse Breeders' Association and the officers of my department. It has its advantages but it also has its dangers; we have not yet come to a conclusion in the matter.

Mr. CURRIE (North Simcoe).—The Standard Bred Books allow an infusion of the thoroughbred.

Hon. Mr. FISHER.—Well the Standard Bred Books as I understand them are a little different from any other horse books.

Mr. CURRIE (North Simcoe).—Does not the Hackney permit of the thoroughbred strain?

Hon. Mr. FISHER.—I am not certain, but in the Standard Bred a record of performances and performances of progeny will entitle an animal to be registered, it does not matter what its breeding is. I don't think there is any other breed that allows that kind of thing and for that reason the Standard Bred Book is a little different from any other register. Some other registers, I think the hackneys, allow—

Dr. RUTHERFORD.—Not now.

Hon. Mr. FISHER.—Not now? They used to allow a certain infusion of thoroughbred.

Dr. RUTHERFORD.—In the case of Yorkshire coach horses.

Hon. Mr. FISHER.—Some of the coaching breeds I think have allowed the same. If such a permission is given in regard to the French Canadian horses we will have to consider carefully the conditions, and the breeds which would be permitted to be infused, with the greatest care. I may say in regard to the French Canadian horse that I have ever since I was a boy been connected with horses. The first animal I was ever put on in my life was a French Canadian pony which my father had and drove for many years. That pony could go his 12 to 14 miles an hour at any time. My father was a doctor and used to drive from morning until night and many a time I have driven him 12 miles an hour.

Mr. WRIGHT (Muskoka).—What were his sire and dam?

Hon. Mr. FISHER.—I cannot tell you what his sire and dam were. In the province of Quebec they had then an immense quantity of what they called pure French Canadian stock, and this pony had all the characteristics of the breed. He was an almost exact image of the horse which Dr. Rutherford described. He was a deep, dark mahogany brown with a mane and tail that swept the ground almost.

Mr. WRIGHT (Muskoka).—How much did he weigh?

Hon. Mr. FISHER.—He was from 14 to 15 hands in height and would weigh probably about 900 pounds. There used to be hundreds of such horses around Montreal driven by the habitants in their charettes, drawing heavy loads and doing the general work of the farm. There was another class that I remember very well too, a much larger type that we used to call St. Lawrence. They were generally black, big, proud horses, holding their heads high, with tremendous forelocks, manes and tails, very broad chests, of course, strong animals. Those animals you never see today around the island of Montreal; they are practically destroyed.

Mr. CURRIE (North Simcoe).—Is there is any possibility of reviving the breed?

Hon. Mr. FISHER.—That is the kind of work we are trying to do.

Mr. HODGINS.—Where have you discovered the type of the true French Canadian horse?

Hon. Mr. FISHER.—The ones we have examined and registered so far have been chiefly on the north shore of the St. Lawrence and around St. Hyacinthe and St. Johns and there are quite a few down below Quebec on both sides of the river, but the type has been practically destroyed by the infusion of other blood in an unscientific and reckless and irregular way.

Mr. CURRIE (North Simcoe).—Have you any hope of reviving the St. Lawrence type?

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Hon. Mr. FISHER.—The present stallions as seen at the horse shows are larger than the old type that I was first describing, the French Canadian pony. The St. Lawrence horses used to weigh as high as 1,300 pounds, 1,200 I think was their average. The present stallions that we see at exhibitions run I think about 1,200 and some as high as 1,300.

Dr. RUTHERFORD.—1,350.

EXHIBITION AT ST. JOHNS, P.Q.

Hon. Mr. FISHER.—I don't know whether you gentlemen have visited any recent horse shows in the province of Quebec. The last exhibit at St. Johns was a magnificent one. There were over 100 horses and they were really very fine animals. The gentleman who went down from Bowmanville to judge them has been handling French Canadian horses for many years, Mr. Pollard, who is perhaps known to some of you as a horseman. He was perfectly astonished and delighted with the exhibit, and he said that it was a very difficult task indeed to award the prizes, there were so many thoroughly good horses.

Mr. SMITH (North Middlesex).—I will only detain you a moment, but I would like to give a little testimony to the good qualities of the French Canadian breed of horses and as to the advisability of re-establishing that breed if it be possible. There are quite a number of these horses that I have had the pleasure of handling personally, and I know of the good qualities that they possess. I have in mind one particular team which was typical of the large number that I was conversant with. This team weighed 1,250 pounds each as nearly as possible. They were very well matched. They were black and of the same type as that shown in the illustration which was handed around, except perhaps they were a little chunkier. Unlike the characteristics that Dr. Rutherford has spoken of, viz., their desire to go a little slower than required, they would travel up to the 10 miles an hour without any urging whatever and if urged would make 12 miles an hour and continue it for a couple of hours or more; I have seen them do it. On a 10 mile gait they would continue for three or four hours without any trouble whatever. Besides that they would walk with a good ordinary sized load at about 4 miles an hour. I think that is one of the best qualities you could have in a farm horse, and the French Canadian is an ideal farmers' horse. Besides that I have seen the same team matched against other heavier horses, horses that would weigh probably 1,600 or 1,700 lb. The French Canadian horses would draw a heavier load than heavier horses, not because they had the weight, but simply in the starting the heavier animals would get down to it and by sheer force would be able to move while the smaller team by quicker action would start. Once started the greatest trouble was overcome. That is one of the characteristics I have found in these French Canadian horses and I fancy that we have not yet developed any breed, or mixture of breeds, of horses that would come up to the French Canadian as a general purposes horse. It is perhaps the most valuable horse that the farmer could have either in Quebec, Ontario or the West. Doubtless a heavier horse is more profitable to raise because you can sell it at a larger price.

The CHAIRMAN.—I can add a word of appreciation on the same lines that Mr. Smith has referred to. When quite a boy our folks got possession of a French Canadian, or what was said to be a French Canadian, pony, weighing one thousand and a half pounds. It was quite black and a beautiful type of horse, well quartered, good clean legs, and could do on the road a mile in four minutes. This pony would go at the rate of 12 miles an hour for one, two, three or four hours; in fact pretty nearly for the whole day, and I have driven him 30 or 40 miles and he would come home just as bright as when he left. We had this pony from the time that he was 4 years

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old until he died. He was admired wherever he went. Whether it was in the city or the country people would admire him and say, 'That is a pretty horse, where did you get it?' He was raised by a farmer in the neighbourhood, I don't know where the mother was obtained, but he was just typical of what I understand the French Canadian horses to be; one of the handsomest and most useful horses that we ever had upon our farm, a beautiful animal and useful in every way. I think he must have been an ideal French Canadian horse.

TELEGONY.

By Mr. Owen:

Q. I wish to ask Dr. Rutherford to explain this fact. I was told it by a Presbyterian minister. He owned a mare of the light harness type. He bred her to a registered pacing stallion. She lost a colt about 2 months before her time. A few months after that he bred her to one of the best pure bred Hackneys, and the result was a pacing colt of the light harness type. Can you explain that?

A. I would ask you before endeavouring to answer the question whether the service by the pacing stallion was the first service that the mare had ever had?

Q. Yes, I think it was.

A. That is what is known as telegony and it is one of the most disputatious subjects among breeders at the present day. It is claimed by many breeders and many men of experience, and I myself am a strong believer in the theory, that an animal bred for the first time is liable ever afterwards to show in her progeny some of the characteristics of the first male with which she has had connection. Prof. Cossar Ewart, who is a brother of the Chief Architect of the Public Works Department here, has gone most exhaustively into the subject and has demonstrated to his own entire satisfaction and to that of those who believe with him, that no such thing exists. I have, however, in my own personal experience, which has now unfortunately extended over a great many years, seen so many instances of it that it will take a great deal more than proofs which Prof. Ewart has produced to convince me that such instances as that which you describe are not quite in the natural order of things.

DISPOSITION OF THE FRENCH CANADIAN HORSE.

Hon. Mr. FISHER.—There is one thing more I would like to say about the French Canadian horse—it has not been touched on—and that is as to his disposition. The horse as a rule is the most kindly, gentle and docile horse I have ever had the opportunity of handling, and he is also one of the truest to his work; he never gives out, it does not matter what he is at, if it is on the road he travels along forever, and if he has a load behind him he will tug at it until he moves it. He never baulks and children can handle him with the greatest safety. In every way he is docile and kindly.

By Mr. Currie (North Simcoe):

Q. What result would you get by crossing the French Canadian mare with a Clydesdale horse such as you referred to?

A. King John, I think, is perhaps more of a Percheron than a Clydesdale, from his picture. The horse, himself, King John, was a very handsome horse, a horse of great symmetry and conformation. I think myself that in the first cross you would get probably a very useful animal, off the Clydesdale, a very good horse, but then you could not go any farther with that cross; you would simply have to stop there.

Q. The reason I ask you is this: the farmers of Western Ontario, especially in the district I represent, will only breed to a thoroughbred or a close well bred

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Clydesdale either for work or for the coach, and they say these are the only two types of horses that are of any use if you want to sell them. When you ask them to introduce any new blood they are very chary of it unless they think they can improve along these lines. I would like to know whether that type of horse would assist them in that direction?

A. I do not think it would.

Mr. MILLER.—Some reference has been made to the exhibition of French Canadian horses held last year. I would like to know when and where they purpose holding their exhibition this year?

A. The exhibition will be held during the month of September at St. Hyacinthe. It was held in St. Johns last year, but this year, according to the present arrangement, it will be held at St. Hyacinthe.

By Mr. Currie (North Simcoe):

Q. Are these horses exhibited at Toronto?

A. No, I do not think so.

Q. Why?

A. There is no class for them.

Q. There is no class for them?

A. No.

Q. Could not a class be got for them?

A. That, of course, would be for the people of Toronto to say.

By Mr. Hodgins:

Q. About what is the value of these French Canadian stallions?

A. Well, there are comparatively few good ones for sale. The highest price that I have heard of was \$1,500.

Q. About the same as the Clydesdales, I suppose?

Q. Yes. Really good ones are very difficult to get because people do not like to part with them.

By Mr. Cash:

Q. Are there many of such horses?

A. We have registered in the present stud book 969—the majority of them of course are mares.

Mr. MILLER.—I think, Mr. Chairman, this is about the best address we have heard before this Committee and I move a very hearty vote of thanks to Dr. Rutherford.

Having read over the foregoing transcript of my evidence, I certify the same to be correct.

J. G. RUTHERFORD,

Veterinary Director General and Live Stock Commissioner.

DAIRYING AND COLD STORAGE

HOUSE OF COMMONS,

COMMITTEE ROOM No. 34,

WEDNESDAY, March 24, 1909.

The Select Standing Committee on Agriculture and Colonization met at 11 o'clock a.m., Mr. Schell, the Chairman, presiding.

The CHAIRMAN.—We are pleased to have Mr. Ruddick with us this morning. His work has been of such a nature that you are all acquainted with it as well as with Mr. Ruddick himself. Therefore, that gentleman needs no introduction from me and I have much pleasure in calling upon him to address you.

Mr. RUDDICK.—Mr. Chairman and Gentlemen,—I am pleased to meet the Agricultural Committee of the new parliament to give some information concerning the work of the Dairy and Cold Storage Branch of the Department of Agriculture, over which I have charge—something about what we do and how we are trying to do it. It seems to me that is a fitting subject to discuss, especially in the case of a new committee and a new parliament.

I would like to refer briefly to the origin of this branch. It dates back to February 1, 1890, when Prof. James W. Robertson was appointed Dairy Commissioner and Agriculturist to the Experimental Farm. At the same time, Mr. J. C. Chapais, who resides at St. Denis, Que., was appointed Assistant Dairy Commissioner, and he still fills that position. Beginning with the spring of 1891, a staff of experts was appointed to assist Professor Robertson in carrying on the work in which he was engaged at that time. I believe I have the honour of being the first man appointed to a position on the staff of the Dairy Commissioner, on April 6, 1891. The staff was increased from time to time as the work expanded, and in 1899 Mr. F. W. Hodson was appointed Live Stock Commissioner under the Commissioner of Agriculture and Dairying, as Professor Robertson was then called, to supervise the work in that extension of the branch. In 1901 the work of the branch was divided into the divisions of 'Dairying,' 'Live Stock,' 'Extension of Markets,' and 'Cold Storage.' Later on the 'Fruit,' 'Seed,' and Poultry divisions were added to the other divisions of the branch. Then, when Dr. Robertson resigned on December 31, 1904, there was some re-organization. The live stock and poultry divisions were made into a separate branch, known as the Live Stock Branch, and the seed division was also made a branch. Then the divisions of dairying, cold storage, fruit and extension of markets remained as the Dairy Branch, as it was called then, and the minister did me the honour to appoint me Dairy Commissioner at that time. So that was the beginning or the origin of the branch as it exists to-day, except that the designation of the branch was changed to that of the Dairy and Cold Storage Branch, at the time of the passing of the Cold Storage Act.

By Mr. Armstrong:

Q. Before you leave that, might I ask a question as to whether you think it wise to continue all these different branches under the one man who is, like yourself, for instance, supposed to be devoting all his time to dairy work, or the bulk of it. Can

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he be expected to know all about fruit and other different branches, and be able to present his case before the minister as he otherwise would do if he was directly interested in the one branch in particular?

A. You are asking me now in regard to a question of policy, as to which I do not think I am quite competent to reply. But I think I might, if you will allow me, correct you on one point. You say that I am supposed to devote all my time to dairying. I think I am safe in saying that I devote very much less time to dairying than I do to the other divisions of work. If you will permit me to go on, I think I shall be able to show you that I give a great deal more time to other divisions of work than I do to dairying.

By Mr. Owen:

Q. Do I understand that you claim to be thoroughly up in the growing of fruit or simply the care and shipping of it?

A. I don't claim to be an expert in horticulture. We don't deal with that phase of the industry at all in our work.

Q. It is the care of fruits?

A. It is the transportation and the commercial end of the fruit industry that we deal with. The horticultural work is carried on at the Experimental Farm.

WORK OF THE DAIRY DIVISION.

Now, if I may be allowed to continue and discuss the work of the branches along the lines on which I propose, I would take it up under the head of these four divisions, beginning with the dairy division, because it is the oldest division in the branch. I was fortunate enough a year or two ago to secure the appointment by the minister of one of the best known dairy experts in Canada, Mr. George H. Barr, who is the chief expert in that division, and who takes charge of the detail work and carries it on in consultation with me.

By Mr. Wilson (Lennox and Addington):

Q. How long since he was appointed?

A. About two years ago. He was formerly chief dairy instructor in western Ontario and Superintendent of the Dairy School at Strathroy. He is one of the best known dairy experts in Canada, and we were very fortunate to secure his services. Now, in regard to the work carried on by that division. Last summer Mr. Barr was assigned to some experimental work in the county of Lanark. We secured the use of part of a cheese factory and conducted experiments in the handling of milk on the farm for the manufacture of cheese. It would not be interesting to the committee for me to go into any details of that work, but I am glad to be able to say that it has practically produced a revolution in the handling of milk on the farms for the manufacture of cheese. I do not know any work that has ever been presented to the dairy conventions in all my experience of over twenty-five years which has been so satisfactory, and has been so generally accepted as the results of these experiments conducted last summer. I am glad to be able to say that it has simplified the work of caring for milk, for cheesemaking, on the farm, and it has taught the patrons of factories how to handle the milk so that it will produce more cheese and better cheese.

COW-TESTING ASSOCIATIONS.

Probably the most interesting, and certainly the most extensive, work which the dairy division is carrying on at present is the organization of cow-testing associations and the encouragement of the testing of individual cows, with the object of improv-

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ing the production of the dairy herds in Canada. There is much need for that improvement. The provincial authorities in Ontario took a census last year, getting statistics from the secretaries of cheese factories, and they found that the average quantity of milk delivered at the cheese factories in eastern Ontario during the season of 1908 was only a little over 2,700 pounds of milk per cow. And yet the man who won the dairy herd competition last year in western Ontario delivered over 8,000 pounds of milk per cow during the season, during the period that the cheese factory was in operation, the same period during which the other records were taken. Now, that herd was probably one of the best herds, but it shows the possibilities that lie in this direction.

By Mr. Wilson (Lennox and Addington):

Q. The large yield you spoke of was more than double the other, was it not?

A. More than double.

By Mr. Armstrong:

Q. How many of these associations are there in Ontario?

A. At present there are 94 associations and 10 smaller groups of three or four farmers, who are joined together for the same purpose, and then there are a large number of individuals who apply to us for the necessary forms for keeping the records and which we supply without cost. We encourage that sort of thing as much as possible. The individual work by farmers here and there throughout the country is growing very fast. Every mail I get a large number of applications for these forms from individuals so that they may take up the work. Mr. C. F. Whitley is doing valuable work in charge of these records.

By Mr. Broder:

Q. It was in 1908 that the record was made in the yield of milk in Ontario?

A. Yes.

Q. It was a season of great drought?

A. Yes. I should have qualified the statement to that extent.

By Mr. Staples:

Q. Would the increased yield not be due very largely to the care that was given to the cows? Would it not be due to that fact just as much as to the particular breed?

A. I do not think it was due to the particular breed. It was due to the individuality of the cows, because we find from our records that there are good producers and poor producers among all breeds.

Q. That is what I mean; do you not think it is the care given to the cows?

A. The care and feed have a great deal to do with it, but the individuality is responsible for a great deal more.

By Mr. Broder:

Q. You can get as much of a yield from a good cow that does not get good care as from a poor one?

A. Yes. I would like you to understand how this work is done. A group of farmers, say from 10 to 20, undertake to weigh the milk on certain days in the month, and take a sample for testing and then deliver it to some central point near the cheese factory or creamery, where it is tested. Under the present arrangement, the Department of Agriculture pays some local person to do the testing. We have to pay about 5 cents per test. That plan saves the cost of travelling expenses in sending a man

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around, and besides we are trying to get the cheese factory and creamery owners interested in this work and make these places the centres of that sort of thing. They should encourage it because the owner of a cheese factory is certainly interested in increasing the supply of milk within the area from which he now obtains it. It reduces the cost of transportation and would very materially reduce the cost of manufacturing cheese or butter in this country if the supply of milk within the area from which the factories now draw their support was increased, as it might be fully one-third or even 50 per cent, if the dairymen would study their herds, make careful selections and breed only from the best producers.

Q. Before the test took place the farmers were not aware at all of what the herds were doing individually?

A. No. There were some very great surprises. We find this rather striking fact: the average farmer judges his cows by the amount of milk they give while fresh; but it is the persistent milker that proves to be the good producer in the end, as a rule. When the record of a test and the weights for the month were obtained, they are sent to my office and compiled, and a report is sent to every member, showing the total yield of each cow to that date, from the beginning of the season. Then we make a monthly summary for each association, and strike off a large number of copies with a duplicating machine, and send a copy to every member of all the associations, so that the different members get reports from all over the country, and are thus enabled to make many interesting and instructive comparisons. These summaries are also sent to the newspapers.

By Mr. Wilson (Lennox and Addington):

Q. I sent copies of a bulletin on cow-testing to a great many farmers in my riding. They appreciated it very much, and a great many of them wrote to me thanking me for it.

A. I might dwell on that topic, but there are a good many other things I would like to refer to, and my time is limited, so that I shall have to proceed.

COOL-CURING OF CHEESE.

I might say that we still continue to advise and to urge the cheese factory owners to adopt plans for the cool-curing of their cheese. I am glad to say we are making considerable headway. There are now over 100 factories, including some of the largest factories in Canada, in southwestern Ontario, equipped with all the facilities for controlling the temperature, so that they can cure the cheese to the best advantage.

By Mr. Armstrong:

Q. Are they receiving a higher price for their cheese?

A. They are.

Q. How much?

A. They receive in some cases as much as a quarter of a cent. The point is, they receive more for the milk, because there is a better yield, and then there is a saving of losses which occur very regularly in places where the cheese are ordinary cured.

By Hon. Mr. Fisher:

Q. There is a saving of shrinkage?

A. That is what I meant by more of a yield from the milk. I might repeat a statement I heard made recently. At a cheese banquet which I attended in Belleville the other night a salesman from one of the largest factories in the district said they had put in a cool-curing room two years ago, and after a careful calculation

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they concluded that they had received a thousand dollars extra in that period, in return for an outlay of about \$600. I could quote numerous statements of a similar nature.

By Mr. Armstrong:

Q. You think the average increase would be about half a cent a pound?

A. I don't say they get half a cent a pound extra for the cheese, but you see there are other ways in which they get an advantage. They get the increased yield and the saving of 'cuts' from defective cheese. This salesman put it in this way, and that explains the views of them all. He said: 'I have been salesman for this factory for 20 years and was always having more or less trouble. The cheese were being rejected and there were constant complaints about the quality. Since the installation of cool-curing the buyers all want the cheese, and we have never had a single instance of trouble.' The advantage comes in that way as much as in the actual gain in the price of the cheese.

Q. You think it would average an advantage to the farmer about half a cent per pound?

A. It might reach that amount, perhaps.

By Mr. Sexsmith:

Q. What have you to say about the shrinkage?

A. The cheese do not shrink as much in a lower temperature.

Q. There is a large shrinkage now, and that is one reason why I think the introduction of cool-curing rooms was a good thing; it enables the cheese to be kept in a much better condition. In my district the cheese is shipped out after 10 days, and there is a good deal of shrinkage.

A. Cheese shrink a good deal in 10 days. I know that many lots of cheese are shipped in much too green a condition, and it is a very great injury to the cheese trade.

Mr. SEXSMITH.—I think it is an advantage to have cool-curing rooms to keep the cheese in a better condition.

By Mr. Broder:

Q. There is a great difference between cold storage and cool-curing?

A. I believe in curing cheese at a temperature of about 60 degrees. That is what is called cool-curing. That is not cold storage at all.

Q. The trouble is that people confuse the two.

A. I know it, but they are very different. We don't want cheese in cold storage. Cheese will not develop the proper flavour if kept at extremely low temperatures. They will be neutral in flavour, which can only be obtained by development at the proper temperature.

By Mr. Thornton:

Q. What do you say is a proper temperature?

A. About 60 degrees.

CHEESE FACTORY PLANS.

We are always prepared to furnish cheese factory owners with plans for the improvement of the curing rooms. These are plans which I designed some years ago as the result of a good deal of experience in the building and managing of factories. The specifications for the plans are in the Dairy Commissioner's report for 1906 of which we still have a number for distribution.

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By Mr. Armstrong:

Q. How many factories are there possessing cool-curing rooms?

A. Something like 100 at the present time. Quite a large number have been improved this year. I think there has been more interest taken in the subject during the past season judging by the number of inquiries which I have received than for some years past.

Last season a dairy division officer was stationed at Montreal to act as official referee of butter and cheese. That is to say, if there was any dispute between the buyer and seller as to the quality of the cheese, and both of them asked for the services of this officer, he made an examination of the cheese, and reported as to whether it was up to grade or not. I am glad to say that in cases where the referee gave a decision it was always final as far as a settlement was concerned, although he had no legal status whatever. There was so little demand for the services of a referee during the past season that it does not seem worth while to continue that office. Of course, the market was somewhat favourable, and there was not as much trouble over quality as there is some seasons.

By Mr. Broder:

Q. The fact of there being a referee probably saved a good deal of trouble?

A. Very likely.

Another officer of the dairy division who seems to be doing a useful work is the Inspector of Dairy Products. This man travels about the country and visits the centres where butter is manufactured and where it is packed, with a view of detecting violations of the Butter Act or other dairy laws. I am glad to say that we don't have many infringements of these laws, but quite recently a firm was convicted in the city of Quebec for selling spurious butter, and when the matter was investigated they traced the butter to the manufacturer in Montreal.

Q. Has that happened lately?

A. About four weeks ago.

Q. I saw something in the newspapers about it.

A. The owner of the factory was fined \$400 for the manufacture of spurious butter, and I hope we have effectually stopped the manufacture of it. I am glad to say this is the first instance of the manufacture of margarine, as it might be called, in this country, as far as we know, and we think we have succeeded in stopping it. It will be watched very carefully in the future.

Q. Were there some convictions before the law was passed?

A. There was one conviction for the importation of margarine a few years ago.

By Mr. Sexsmith:

Q. Is there any butterine manufactured?

A. It is the same thing.

By Mr. Thornton:

Q. It has been stated that the practice is quite common in Montreal?

A. I would not admit that the practice is common, but I suppose there have been some references to the convictions that have taken place. There have been one or two convictions for infringement of the Butter Act by branding dairy butter as creamery.

By Mr. Barr:

Q. There was one in Grand Valley, in Dufferin county?

A. Yes, and there were two other cases in Toronto which arose out of that one, making three cases. The inspector detected two merchants in Toronto taking the

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dairy wrappers off the butter and wrapping it in paper with a creamery brand and selling it as such in the market. This officer seems to be doing good service in protecting the legitimate dairy industry.

By Mr. Wilson (Lennox and Addington):

Q. Was this merchant fined for the offence?

A. Yes; the fine was \$10 in one case for false branding and in another case \$25.

By Mr. Barr:

Q. It was only \$10 at Grand Valley?

A. Yes. In the case of the manufacture of spurious or imitation butter the fine is \$200 to \$400.

By Mr. Broder:

Q. And I suppose they confiscated the whole apparatus?

A. No, there is no power to do that under the Act.

By Mr. Armstrong:

Q. Before you leave that question, do you make any examination of the factories to see whether they are in the habit of purchasing dairy butter and shipping it out as creamery?

Q. Yes, we have done some work of that kind. We work in co-operation with the local inspectors in such a matter, and they report to us anything of that sort which they see going on. They are constantly visiting factories, and are in a position to know if there is any crooked work of that kind being carried on.

WORK OF THE FRUIT DIVISION.

Now, that is all I intended to say in connection with the dairy division. As in the case of Mr. Barr in the dairy division, I am very fortunate in having the assistance of so capable and experienced a fruit man in the person of Mr. Alexander McNeill, whom most of you know. The Chairman has suggested to me that it might be well for Mr. McNeill to appear before the committee and explain the work of this division; so I shall not take up much time in discussing it, but will pass on to some other things. As you know, the chief work of the fruit division is the administration of the Fruit Marks Act, and during the summer months a considerable amount of time and attention has been given to the compilation and publication of the fruit crop report. These schedules, such as I have here, asking for information on the crop, are sent out once a month to some four or five thousand correspondents in different parts of the country. When these are returned the information is compiled and published in the form of a report like this (holding up publication) once every month. It goes out within two or three days after the first of the month and covers the information for the previous month. These are circulated among the correspondents and are sent to any other person who desires to have them. They do not go out on our regular mailing list, because many people would not be interested in them. There is a special list for those receiving the fruit crop report, and some eight or ten thousand were distributed every month last year. Of course, as they are asked for we shall be able to have more of them.

WORK OF THE COLD STORAGE DIVISION.

Turning to the cold storage division, I may say that this is the one division to which I give my personal attention, and to which I probably devote more of my time

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at present than to any of the other divisions, as far as details are concerned. One of the oldest duties of the cold storage division is in connection with the payment of the bonuses for the construction of cold storages at creameries, and I would like to read the circular which announces the conditions under which this payment is made:—

To Creamery Owners,—

I am directed by the Honourable the Minister of Agriculture to state that Parliament will be asked to extend the bonus of \$100 for cold storage at creameries to the year 1909.

Conditions of Payment.

Payment for the full amount of the bonus will be made at the close of the buttermaking season upon fulfilment of the following conditions, viz.:—

1. An efficient cold storage must be built according to plans and specifications supplied, or approved, by the Dairy and Cold Storage Commissioner, Ottawa.

2. A sufficiently low temperature must be maintained in the cold storage to protect the butter against injury for a reasonable length of time.

Creamery owners desiring to take advantage of this bonus will be required:

1. To make application before May 1, 1909, on forms provided for the purpose.

2. To send in a daily record of temperature maintained in the cold storage once a month during the season.

The construction of the cold storage will have to pass inspection by an officer of the department, or some person designated to make a report of it. The efficiency of the cold storage will be determined by this report and by the monthly reports of temperature.

Inspectors of the Department of Agriculture, Ottawa, must be permitted to examine the construction of the cold storage and to make tests of temperature at any time during reasonable working hours.

The temperature of the butter in any package which has been three days in the cold storage will be taken as representing the average temperatures of the cold storage.

The balance of the circular deals with the plans and specifications.

By Mr. Sproule:

Q. What assistance by way of bonus is given to each factory?

A. \$100.

Q. How many have taken advantage of it during the last few years?

A. Something like 660 creameries have received the full bonus.

Q. If it is in your report, I can get the information there?

A. I have with me the figures for last year. There were 18 last year, and then there were some back payments covering three additional creameries. They did not quite comply with the conditions at first, and they had to make the improvements and report another year before they could get the payment.

By Mr. Wilson (Lennox and Addington):

Q. You pay at the end of the season?

A. At the end of the season. We want to test the cold storage before we pay.

Q. Then you pay them all in one season?

A. We make the payments in one season.

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By Mr. Armstrong:

Q. You do not ask them to continue it for any length of time afterwards?

A. No, they continue the work themselves afterwards.

Iced Car Services.

Next in order comes the iced car service. You are probably all familiar with these services, but I would like to explain briefly the different services that are carried on at the present time. The first and oldest service is the iced butter car service. This service is arranged with the different railway companies so that cars start at certain points on certain days every week and pick up small lots of butter at way stations for Montreal. The terms of agreement between the department and the railway companies are as follows: The department guarantees two-thirds of the earnings of a car load at the current tariff rates from the starting point to destination plus \$4 for icing the car. If the car earns more than two-thirds of the car load then there is no claim on the department. A large number of these cars are run each year without any claim being made. The guarantee from the government enables the railway company to put on the service and the shippers knowing it will be regular, whether there is any butter to ship or not, make preparations to use it throughout the season. There is no doubt but this service, which was inaugurated a good many years ago, has assisted very materially in developing the butter industry in this country, because without it the individual shipper with a few boxes of butter could not take advantage of the refrigerator car. Ordinarily, if you want to use the refrigerator car you have to pay for a car load, because it cannot be used for mixed shipments, and, therefore, the only thing the creamery man could do without this guaranteed service would be to allow his butter to accumulate in the creamery until he had a car load—which is very objectionable, because it goes off condition— or else ship it in small lots in ordinary cars.

By Mr. Armstrong:

Q. Are these iced cars all examined when they come to Montreal?

A. Yes, if you will allow me I will refer to that matter under the head of inspection.

By Mr. Brown:

Q. Did I understand you to say that the government pays \$4 for each iced car?

A. The agreement is that the government guarantees two-thirds of all the earnings of a car at current tariff rates and pays \$4 for icing the car. If the earnings of a car amount to two-thirds, that is if the freight carries amounts to two-thirds of a carload and enough more to cover the \$4, then there is no claim at all.

By Mr. Sproule:

Q. I think the defect of the system in the practical working out is that many parties bring their butter to the station and find the car is filled and they have to take it away again.

A. Yes, cases of that kind have occurred no doubt but we find that when there is more butter than will fill one car another car is put on. I don't think that has occurred in a great many cases. We have inspectors travelling over these lines all the time. They very soon hear of anything of that kind and some other arrangement is made.

By Mr. Blain:

Q. How far west are these iced cars provided?

A. As far west as Windsor and points on Lake Huron and the Georgian Bay.

By Mr. Armstrong:

Q. Before you leave the subject of iced cars. It seems to me that \$4 from a point in Western Ontario down to Montreal would be ridiculously small amount to ice a car?

A. Yes, the actual cost is more than that but there are a large number of cars coming from points within a short distance of Montreal where the cost is not \$4

Q. Is there anyone in the government employ that would know whether the cars were iced?

A. Yes, but I would like to refer to that later on, if you will allow me, as I have notes on that point.

Iced Cheese Cars.

Then the next iced car service is the iced cars for cheese. That is a different arrangement. The arrangement is that the Department of Agriculture will pay the icing charges to the extent of \$5 per car on refrigerator cars supplied for the shipment of cheese in car loads during the season. Cars are supplied by the railways on the demand of the shippers up to a certain number per week for about 10 weeks during the hottest period of the year. Between 1,100 and 1,200 cars were supplied in that way to the shippers last year throughout the cheese making districts.

By Mr. Armstrong:

Q. Does the government always pay that \$5?

A. They pay the icing charges to the extent of \$5, but it sometimes costs more to ice a car.

By Mr. Sproule:

Q. Is there anything to indicate the temperature at which these cars are kept on the trip?

A. Yes.

Q. By means of thermographs?

A. The inspectors make an inspection of the contents and they often use thermographs. I will come to that later on.

ICED CARS FOR FRUIT.

This season there was an iced car service, which seems to have been very useful, and that was the iced cars for the carriage of fruits intended for export in cold storage. Quite a large number of cars are supplied in that way and on practically the same terms and under the same arrangement as the iced cars for cheese.

COLD STORAGE CHAMBERS RESERVED FOR FRUIT.

I had the minister's authority to arrange for a service on the ocean for the carriage of tender fruits, which turned out very satisfactorily indeed. I refer to the matter of having certain chambers on the steamships reserved for the carriage of fruits only. Shippers of fruits have met a difficulty in the past when desiring to make small shipments of tender fruits or early apples in cold storage, because the smallest cold storage chambers on the steamers have a capacity of about 2,000 cubic feet, and no single shipper, as a rule, has enough of that class of fruit to fill one of these chambers. No other produce could be put in the chamber along with the fruit,

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because you require a temperature of about 33 to 34 degrees, and that is unsuitable for other products. The result has been that ships have been unable to provide much accommodation for this class of fruit. Last season we made arrangements with the Thomson Line and the Allan Line in connection with their London services to reserve chambers on four steamers sailing on August 22, August 29, September 5 and September 19, with this understanding, that if there was not sufficient fruit to fill the chamber that the government would pay for the dead space. Shippers were notified that the space was available, and I am glad to be able to tell you that there was no dead space, and that we have not been called upon to pay for any. The shipments seemed to have turned out very well, on the whole. I hope that this arrangement may be continued another season and extended to other ports in Great Britain, with special refrigerator cars to make close connection with each steamer. I have here a number of references from shippers which I would like to give to the committee. Mr. Woolverton, of Grimsby, wrote to the *Farmers' Advocate* of October 29, as follows:—

EXTRACT FROM 'FARMERS' ADVOCATE,' OCTOBER 29, 1908.

'Bartlett pears have been a tremendous crop, though slightly under-sized. Home demand has not been brisk, but excellent results were derived by exporting to Great Britain. Arrangements were made to ship in lots of 100 to 200 cases by express, on Tuesdays and Thursdays, to be loaded in Montreal on Wednesdays and Fridays. The returns were highly satisfactory, the profit being double that from home sales. Naturally, the highest profit came from No. 1 stock, as the charges are too high to ship low grade fruit so far.

'These shipments of pears in small lots were made possible by the fact that charges on space on the boats were guaranteed by the government. If this boon were extended to refrigerator cars to make regular connections with ocean steamers it would be greatly appreciated by fruit growers. Many have small lots, but fruit men are slow to start for fear the car would not be full. If the charges were guaranteed there would be few instances in which available space would not be taken, provided growers knew a car would be ready on a certain date, or on a certain day each week.'

Mr. E. D. Smith, of Winona, wrote me in the same connection. He says:—

'The Bartletts which I shipped on the *Sicilian* appear to have arrived in good condition, for they sold at a good price.'

We have any amount of evidence to show that it is possible to handle even peaches and many varieties of pears and land them in Great Britain in good condition, and in such condition that they will bring good prices.

By Mr. Armstrong:

Q. Why is it that such a small proportion of the fruit we produce in the country gets to market?

A. It is simply because of lack of method in the handling of it. Even the facilities that are available are not used to the extent that they might be.

By Mr. Sproule:

Q. Have you shipped any tomatoes under that system?

A. Shipment of tomatoes to Great Britain has not been very successful. The trouble seems to be the tomato does not lend itself very readily to cold storage. It must be picked a little on the green side to keep that long, and it does not ripen well in cold storage. The tomato seems to require the sun to give it colour and to ripen it. Cold storage men all agree that it is very difficult to preserve tomatoes with

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success. In order to keep at all, they have to be picked on the green side, and then they do not ripen nor colour well, but are inclined to go down and become soft and watery. A shipment of some 400 or 500 cases of British Columbia apples was required for the exhibition at London, and was sent in one of these cold storage chambers in the same way. I have a report from our London inspector on this fruit, in which he states:—

(Copy of Cargo Inspector Davis' report on fruit carried in cold storage on SS. *Huron* to London, October 27, 1908.)

'This exhibition fruit was well stowed and brought at a maintained temperature of 33 degrees, the atmosphere at time of landing being 48 degrees. With Mr. Giradrot, of the Canadian section, I examined a case of each variety, and have to report that the condition justified the care taken at the port of lading, the fruit being sound, of good colour, large and free from bruises.

'This was really exhibition fruit and the growers may have good reason to be proud of their achievement.'

I would like to give you some idea of how we were able to place fruit on exhibition at the Franco-British exhibition last autumn. The extract which I shall read is from a letter written by the commissioner to me in regard to the fruit which arrived there. He states:—

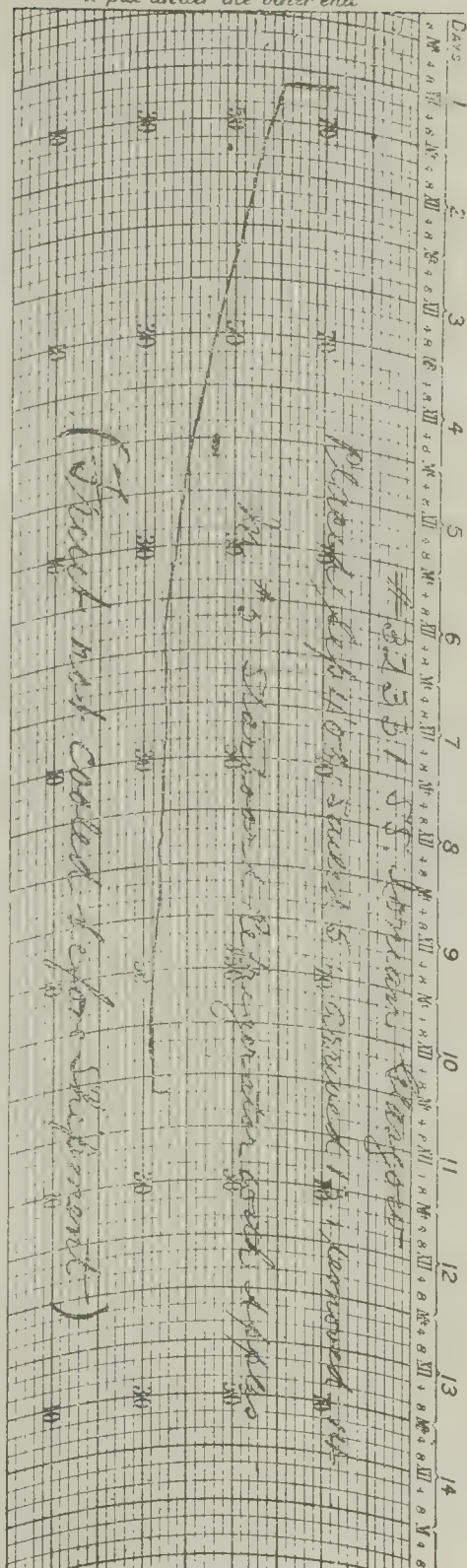
'On September 5 we received 26 cases of new crop apples and 35 more on Saturday, September 12, On September 18 we received a small consignment of 17 cases of assorted fruit, among which were three boxes of Bartlett pears, called Williams here, and a box of peaches of the Crawford variety. On October 5 we received a shipment of 151 cases of assorted fruit, consisting of 61 boxes of apples, 24 boxes of pears, 60 boxes of peaches and seven crates of grapes. You will be pleased to learn that all this fruit arrived in perfect condition, and was remarkably well assorted and packed. The Alberta peaches have certainly made a record. Some of the peaches have been for ten days on plates in the exhibit without showing any signs of decay.'

The report goes on to state that sample packages of peaches and pears were sent to commission merchants and dealers in London. One box of 33 peaches sent to Geo. Munro, Limited, netted \$3.65. Another box, which went to Wm. Brooks & Sons, fruiterers, of Regent street, netted \$2.43 for 30 peaches. Averaging the two boxes, the wholesale price received was nearly 10 cents per peach, after paying the commission. They go on to state that peaches of that quality will retail on the market at a shilling each. I don't say that if you made shipments of peaches in a large and commercial way that you would be justified in expecting to net 10 cents in London, but even half of that amount would be a big price for peaches, and there is an enormous demand for that class of fruit at big prices if it is only landed in proper condition. I think we are justified in concluding, from the results of our experience last year in sending over the fruits to the exposition, that by putting it up properly and taking due care in the handling, that sort of fruit can be landed in Great Britain in first-class condition. Of course, shippers have to consider whether the price that can be obtained would justify the extra care or whether they could do better in supplying the home market.

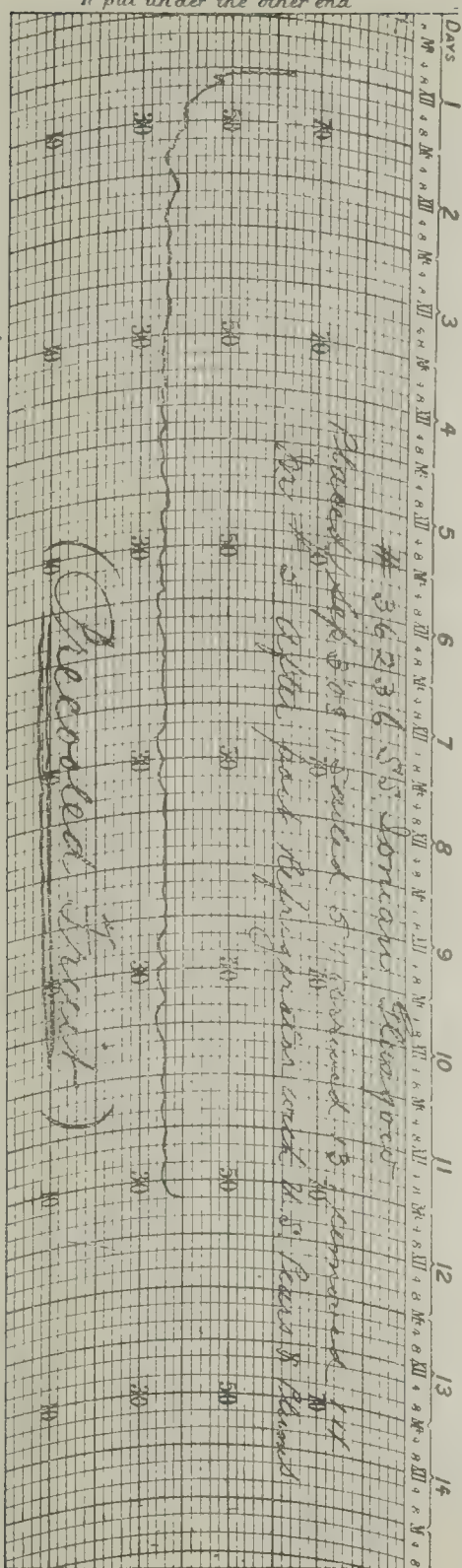
PRE-COOLING FRUIT.

I want to refer to a matter which came to our notice in connection with a shipment of fruit last year, and the importance of having the fruit properly cooled before it is placed on board the steamer. Here is a memorandum which I have on the subject:—

It put under the other end



It put under the other end



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'Memorandum re fruit carried in cold storage on SS. 'Ionian,' which sailed from Montreal, September 5, 1908, for Glasgow.

'Two hundred and seventy-eight barrels of Canadian apples were shipped in No. 5 starboard refrigerator. These apples were examined at Montreal by fruit inspectors and were found to be mostly soft and slack, and some decayed. The temperature of the fruit was 76° and 78°, while the shed temperature was 62°. Thermograph No. 32331 was placed with this fruit, and a record of the temperature of the voyage is attached hereto.

'A consignment of California pears and plums was loaded in No. 5, after port refrigerator. This fruit was also examined by the fruit inspectors. The pears were found in good condition, but some of the plums were over-ripe. The temperature of the fruit, however, was 44° and 45°. Thermograph 36236 was placed with this fruit, and a copy of the record of temperature during the voyage is also attached hereto.

'The difference in these two thermograph records indicates in a striking manner how difficult it is to maintain the proper temperature in a cold storage chamber which has been filled, or partially filled, with fruit which has been loaded in a heated condition.'

Now, I have had an enlargement made of these two thermograph records, so that you could see it. This is the temperature of the room in which the fruit was cooled being put into the chambers. You see it goes right down to 36 degrees, and runs fairly even throughout the whole voyage. In the other the temperature started at 60 degrees, and it was four days before it was down to 40 degrees. The heat in the fruit had to be removed, and the heat which was generated while the fruit was ripening at that rapid rate had also to be removed. The refrigeration of fruit is a very different thing to the refrigeration of butter, where you can put the temperature down as low as you like; but if you put on sufficient refrigeration to put the temperature down quickly you would have the cold air coming into the chamber far below the freezing point, consequently freezing the fruit which it immediately came into contact with. The engineer has, therefore, that difficulty to contend with, that he cannot use the full power of his refrigerating machine in a chamber used for chilling fruit. He is aware of the critical temperature, about 32 degrees, and that it is not safe to have cold air coming in at a lower point. If he was trying to chill a chamber filled with butter or meats or any frozen goods, it would not make any difference; he could then put on the full power of his machine. That is why it is so difficult to manage the chilling of fruit. You will see the importance of having the fruit cooled before it is placed in a chamber like the cold storage chamber on the steamship.

By Mr. Armstrong:

Q. Do I understand you to say that there was a difference in the temperature in the chamber and the temperature of the fruit itself of over 5 degrees?

A. The temperature of the fruit was 40 to 45 degrees.

Q. Well, then, the difference is more than 5 degrees?

A. It is more than 5 degrees. But you see that alone does not indicate the temperature of the fruit inside the package, which has to come down slowly.

Q. That indicates the temperature of the room outside?

A. Yes. It takes time for the temperature of the inside of the package to come down to that of the room outside.

Q. I understand that what you have given us was the temperature of the fruit when taken out?

A. No, the temperature when the fruit was put in.

By Mr. Rankin:

Q. How was that accomplished?

A. The fruit was shipped in refrigerator cars.

Q. From the Pacific?

A. Yes.

By Mr. Broder:

Q. I suppose the fruit would sweat?

A. It would, if taken out and exposed to a warm moist temperature.

Hon. Mr. FISHER.—It is a case of the old story. Refrigerator cars and refrigerator ships are not for the purpose of cooling things, but maintaining things cool. It is impossible to cool things effectually in refrigerator cars or refrigerator ships.

Mr. RUDDICK.—I would ask the committee's permission to refer to an article which I found in a paper the other day. It is with some little pride perhaps that I do so. I find the Copenhagen correspondent of the *New York Produce Review* in the issue of February 24, 1909, writes as follows:—

'The organ of the Swedish agricultural societies urges that: (1) The Agricultural Department on behalf of the creameries contract with the private railroads, whereby they agree to run proper refrigerator cars at least once a week on the, for export, suitable days. (2) That export is done only on those steamers which are provided with good refrigerator machines, and where a registering thermometer is kept in the cool room, and that the temperatures taken on arrival in the foreign port are forwarded to the department. (3) That the state encourage the creameries by a subsidy of \$27 for the erection of cool rooms, if these are built on plans approved by the department. (4) That the state appoint an inspector to supervise these contracts and pay surprise visits to the refrigerator cars and steamships to take the temperature of the butter.'

I think that the Swedish dairy authorities have been reading our reports, and it seems to me that it is very complimentary to the services which we have been carrying on in this country. I happened when I was in Sweden a year or two ago to meet a gentleman who is very prominent in connection with the manufacture and export of butter, and since then I have been sending him my report regularly.

They seem to be urging upon their government in almost the very same words that I have used to-day to do the things which we are doing here.

By Mr. Armstrong:

Q. Just before leaving the transportation question, I would like to ask you this: In your report of two or three years ago you distinctly stated that considerable of the products exported from this country were piled up on the docks at Liverpool, and allowed to remain there from 24 to 75 hours, or something like that. Does that state of affairs still exist?

A. No. That is one of the things I was going to refer to under the head of inspection if you will just leave that. I find that Dr. Wiley, Chief Chemist of the Department of Agriculture, Washington, in his somewhat famous report on 'The Effects of Cold Storage on Eggs, Quail and Chickens,' makes this reference:—

'The Dominion of Canada, it appears, has taken a more active interest officially in cold storage than any other country so far as is known, since they have recognized it by Act of Parliament, and provided to a certain extent for its regulation.'

THE COLD STORAGE ACT.

The members of the committee, I have no doubt are nearly all familiar with the Cold Storage Act, which was passed the session before last. I may say that quite a

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large number of firms and companies have made application for the subsidy given under this Act. I think a return was brought down the other day in the House giving particulars, so that it is not necessary that I should give the names of the applicants.

Mr. BRODER.—Would it not be wise to increase the percentage provided in the Act? The difficulty is that a man of large means won't accept that and be subject to the regulations, and the poor man who is ambitious is not able to get through. I think the country would approve of it if you could see your way clear to increase the percentage.

Hon. Mr. FISHER.—I have been thinking about that a good deal. I think perhaps that instead of increasing the percentage it would be better to make some slight difference in the conditions. I don't think it would be wise to increase the percentage in the case of large companies in large centres; I think it would rather encourage promoters. At the same time, I can quite understand that in a small country place where the business is carried on on a small scale, it might be well to make the conditions somewhat different, so as to give greater encouragement to such cases. I am considering and trying to work out something of the kind.

Mr. BRODER.—I am glad to hear you say that.

COLD STORAGE OF FRUIT.

Mr. RIDDICK.—I would like to refer briefly to the general question of the cold storage for fruit before leaving this subject. No person appreciates more fully than I do the importance of cold storage to the fruit trade. At the same time, I realize that it is a matter which might very easily be overdone in one or two directions, especially as there is not very much information bearing on the subject in possession of the average grower and shipper. What I mean is this: It is a well known fact that early apples, if they are in proper condition, may be placed in cold storage and their life, or the time when they would be in the best condition, thus extended for several months; but if a large quantity of our early apples were to be handled in this way, it might not prove financially successful if carried too far. If, for instance, a large quantity of Nova Scotia Gravensteins were to be cold-stored and kept in perfect condition for a month or six weeks longer than usual, it seems to me the owners would meet this difficulty in disposing of them: The trade and their customers in Great Britain have got to know by experience that the Gravenstein reaches its best about a certain date, and after that date they are unsafe to handle. If they are offered that variety they won't buy it, but will buy something else. If we attempt to extend the period during which certain varieties of apples are to be kept in good marketable condition; we must do it carefully and gradually, and not in advance of public confidence. I think that it would be better to go slowly in this matter. There is another point. I find there is a tendency to look upon cold storage as a sure preventive of decay and deterioration in the apples no matter what their condition may be when placed in storage. Now, if you are going to cold-store apples you must be careful in selecting and putting away apples without defects, skin punctures or bruises of any kind. An apple rots because moulds get beneath the skin and develop there. The skin of an apple in perfect condition prevents the entrance of the moulds or other forms of fungus growth which cause the rot. If there is the slightest puncture, bruise or blemish of any kind, or if the apples are too ripe and the skin thus weakened, such apples put in cold storage will not keep, because the moulds will grow even at the low temperature. Therefore, apples which are to be stored must be very carefully handled. You must be sure to avoid these slight, very slight bruises, which are sufficient to cause trouble in that way. A great deal of loss and disappointment has resulted from storing apples and other fruits and neglecting these precautions.

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By Mr. Sproule:

Q. Before you leave the subject, have you any records of the thermographs taken from day to day in these vessels, and if so, where can we find them? Are they in your reports?

A. The complete records are not in the report. These are copies, or at least photographs. We used the original records as negatives, making these blue prints from them in our own office. These are duplicates of all the records obtained last year.

Q. I mean where could these records be got to be examined?

A. They are in my office, and I would be very glad to show them to any one desirous of seeing them. We think these records are pretty good. They are certainly better than they were at one time, and they show very good results indeed.

By Mr. Lewis:

Q. What limit is there to the keeping of apples which are put in cold storage in perfectly good shape, fall or winter apples?

A. What you mean by good shape is, of course, that the apples should be stored at the right stage of maturity. It is well to remember that an apple which is well matured, but not over-matured, will keep longer in cold storage than an apple which is picked green, because the skin is in more perfect condition.

Q. The question is, how long will they keep?

A. I cannot answer your question off-hand, as there are so many different conditions, but I will give you this illustration: at the Dublin Exhibition a year ago last summer, Fameuse apples, or snow apples, as they are sometimes called, were on exhibition in the month of August, a year after they were grown.

By Mr. Broder:

Q. In good condition?

A. I would not say in perfect condition.

Hon. Mr. FISHER.—They are so good and looked so good that when the King saw them he thought they were wax imitations; he could not believe that they were not until he handled them. I insisted upon his handling them and eating one.

By Mr. Lewis:

Q. They would go to pieces very soon after coming into cold storage?

A. Of course, because they ripen slightly in cold storage.

Hon. Mr. FISHER.—Those apples had been five days on the table when His Majesty saw them.

Mr. RUDDICK.—There is another point in connection with cold storage for these tender fruits, I am speaking now of the soft, tender varieties. Any fruit which is chilled down to about 33 or 34 degrees, is much firmer and harder than that same fruit would be if the temperature was up to 75 degrees. It will stand transportation much better at the lower temperature. It does not bruise so readily, will stand more knocking about without injury.

In connection with the thermograph records which Dr. Sproule mentioned, I would like to call attention for the first time to some records which were secured this year from ships sailing to South Africa from Montreal and to Australia from Vancouver. There were two shipments of British Columbia apples to Australia this year. Thermographs were placed in the chambers along with the apples, and we have just got the records back. We have some special thermographs which run for 33 days for these services. In connection with the South African service we have

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some little difficulty about sending out thermographs. The boats in this service are all run under charter, and when they arrive in South Africa they are liable to go to almost any port in the world, and we do not know when we are going to get our thermographs back. I am pleased to say, however, that we have had in use over 200 thermographs, and in six or seven years we have only lost two; one went down with the *Monterey* and another one disappeared somewhere else, I don't know where.

By Mr. Sproule:

Q. Before you take up the subject of the Fruit Marks Act, have any experiments been carried on with regard to shipping meats and fish in cold storage?

A. I am not aware of any experiments being conducted, but a large quantity of fish is being shipped in cold storage. During the last year there has been a big increase in the shipments of frozen fish and fresh fish in refrigerator cars. Fish is being shipped from Nova Scotia to British Columbia and from British Columbia to Nova Scotia. The haddock, which is not found on the Pacific coast, is being shipped from Nova Scotia in the cured form of finnan haddie in quite large quantities. Then halibut caught off the coast of British Columbia is being shipped eastward and can be found in the cold storage warehouses down in Halifax. A large trade has developed during the last year or two in frozen and refrigerated fish shipped from Nova Scotia out west. Frozen lobsters are now shipped west.

Q. What about beef and mutton?

A. Fresh meat is not being shipped from Canada to any extent, but there is a quantity of American beef that comes through Canada and is occasionally shipped on the Canadian steamships. There are also comparatively small shipments of poultry to Great Britain about Christmas time.

Q. It seems to me there is this defect in the statement of Dr. Wiley, of Washington. He says we have the best cold storage in the world. But they are able to ship thousands of carcasses of mutton from Australia to England and land it in very good condition. I do not see that we are doing anything in that line at all, so that Australia must have a better system than we have?

A. There is this difference between the New Zealand system and our system. I am rather familiar with the New Zealand service, as I had to do with it when out there. They ship only frozen products and at a low temperature and a variation of 10 or 15 degrees makes no difference. They get from zero up to 15 degrees. It is very easy to run a cold storage chamber in that way as compared with our own chambers for the carriage of fruit where you must not go below the freezing temperature of the fruit, which is about 32 degrees, and yet you want to keep it as near as possible to that point, so there is little margin to go on. There is really only one class of products shipped from New Zealand, which is now the most important of meat-exporting countries in that respect. They ship about four or five million carcasses of frozen mutton and lamb annually. The butter is put into the same chamber. They do not carry fruits at the higher temperatures; we have some variety in our products in cold storage, very much more than New Zealand or Australia.

EXTENSION OF MARKETS.

I have still one division to deal with, namely, the Extension of Markets Division, and like the other divisions I have mentioned, the Fruit Division and the Dairy Division, I am very fortunate in having an assistant in the person of Mr. W. W. Moore, who is a very capable man in work of this kind. Mr. Moore has rendered most excellent service to the state and the department in connection with this work. We call this the Extension of Markets Division, but might more properly, I think, be called the Inspection Division, because the work assigned to it consists largely of the supervision of the different inspection services which are carried on by the

department in connection with the transportation of perishable food products. Now, with reference to the refrigerator car inspection, about which a member of the committee has already asked a question, I would say that we keep one man in Ontario and two men in the province of Quebec, where there are more cars running than in the former province, on account of the larger number of creameries in operation. These men go out to the starting point of the cars, travel on the train which carries the car, and are thus enabled to take the temperature of the butter as it is delivered at the station, note the length of time it has been lying at the station, and secure such other information as may be transmitted to the owner of the butter or to the railway officials, with a view of securing a better handling for the butter. They make a report on each trip and we write to the owner of the creamery and call his attention to the fact if his butter is found to be high in temperature, or if it has been exposed longer than necessary at the station. A letter of this kind received by the creamery owner emphasizes a point that he probably may not have thought very much about. The travelling inspectors take the temperature of butter in certain packages at stations and mark them, so that when the cars arrive at Montreal the inspector there finds the marked packages and takes the temperature again. In that way we get a good idea of the efficiency of the service. It is provided in the agreement between the railways and the department that if no ice is found in a car when it arrives in Montreal, there is to be no claim against the department for that car, so that we do not find many cars come into Montreal without ice.

By Mr. Armstrong:

Q. One man may have to look after a number of cars. Can he do that successfully?

A. Yes.

Q. He could not possibly look after them all?

A. He could not possibly be on all the routes in one week, but he gets around often enough to form a pretty general idea of what is going on. On some routes he finds there is so little need of inspection that he pays greater attention to others.

Q. And the temperatures, you say, are published?

A. They are published in my annual report. If you look at the last report of the Dairy and Cold Storage Commissioner, page 97, you will find a large number of records of temperatures of packages of butter at different points, with the names of the creameries whence they came.

By Mr. Brown:

Q. In our section I saw a car being loaded one morning. The teamsters came there with butter from the factories, but the car door was left open much longer than it should have been. To whom should representations be made in such a case as that?

A. When the car is standing at the station, I think the agent is the proper man to attend to anything of that kind. If anything of that kind is being neglected, I would be very glad if you would write to me and I will see that it is placed before the proper official of the railway. I want to say this, that when we have made a complaint, not in general terms, but specifically, regarding any neglect on the part of the train crews, it has always been carefully attended to by the higher officials, because they are desirous of having these things done right.

Q. The agent will reply to you that he is alone and cannot attend to the closing of that door for every teamster that comes with butter, as he has other duties to look after?

A. If I was a shipper of butter, I should look after that thing myself very carefully. It is a very easy matter for the shipper of butter to instruct his teamsters to close the car door after he has unloaded the butter. There is often great carelessness

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and neglect in matters of this kind. Our inspector calls attention to these shortcomings whenever he sees them. It is his business to do that and we have evidence that this sort of educational work has not failed to produce good results.

There are six men at Montreal who act as cargo inspectors, and they give us a report on forms, such as I have in my hand, concerning the loading of every steamer carrying perishable products from Montreal. It covers a description of the refrigeration on the steamer, and how it is ventilated. The report also shows where the thermographs are placed and with what kind of cargo, gives the temperature of butter, cheese, apples and all other products, the condition of packages, &c. There are five inspectors in Great Britain. We get another report from one of them, on each steamer, showing the temperature and condition of the cargo on arrival. These reports are compared and if there is any discrepancy in the condition of the cargo between loading and discharge, we know where the fault lies and get after the responsible parties. I think we can safely say that we have accomplished some excellent results in that respect. Now if you will allow me to go back.

By Mr. Sproule:

Q. Are all these details in your report?

A. Only a summary, we get hundreds of these. That constant supervision of the handling of our food products such as butter, cheese, fruit, meats and all that sort of thing, by these men has had a wonderful effect in improving the condition in which they land in Great Britain.

Some one asked a question about the delay in the removal of butter from the docks in Great Britain. Some years we were obliged to report that butter was very frequently left for seven or eight days on the quay without any special protection. Our inspectors first called attention to this state of affairs, then we took it up with the Harbour Boards, particularly at Liverpool, and with the produce merchants there, and at first they were inclined to tell us to mind our own business, that it was their affair and they would do as they pleased about it. They did not say so quite in those words, but that is what it meant. The thing went on and there was some pretty warm correspondence for a while. It so happened that I made a personal visit to Great Britain about that time, met the importers of Liverpool had a talk with them, explained our position and told them what we were trying to do. Visiting Great Britain two years after that I found the importers at Liverpool quite in accord with our view of the matter, and the agitation had resulted in the Canadian Pacific Railway company having installed a cold storage warehouse in their sheds on the docks. Now the butter is discharged at the Sandon dock, where the Canadian Pacific steamers berth direct from the ship into the cold storage warehouse. The same practice prevails at London, so we don't hear much about butter being left for any length of time on the quays.

Q. Or any fruit?

A. Fruit is not handled from the steamer in the same manner as butter is, nor is it put into cold storage when it is landed there.

A Comparison.

In the evidence of Dr. Robertson given before this Committee in March, 1901, I find this statement:

'Last season our cheese trade got the worst setback from poor boxes and heated quality it ever got. It is now in a precarious condition. I do not know of a time when it was in a more doubtful position than it is at present. We got good prices in the summer, but hot weather in August and September caused the cheese to be heated, and much of it was landed in England in poor condition. It looks as if we might receive this summer of 1901 to the extent of \$2,000,000 less for our export cheese trade,

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because of the bad impression made in England last season by the poor condition in which much of it landed.'

Further on the Commissioner gave the following details:—

I have here a memorandum furnished by an importing firm in Great Britain, reporting on quantities of cheese delivered in a heated condition after August 2, 1900. On August 2, 2,264 boxes arrived with 'scale boards greasy and appearance spoilt.' On August 6, 2,130 boxes are reported as 'scale boards greasy and appearance and flavour spoilt, over developed by the heat.' On August 14, 4,429 boxes arrived 'most of this shipment badly heated, grease coming through the boxes and flavour completely spoilt.' On August 17, 7,893 boxes, 'scale boards greasy, appearance spoilt, flavour of many of them also completely spoilt'; report is similar until September when it says '7,138 boxes, some of these have clean scaleboards, but many of them are greasy and general appearance has suffered.' From August 2 to September 26, this firm reports on 45,358 boxes arriving in heated condition by 19 steamships. They add 'in most of the above mentioned shipments the boxes have also been very roughly handled in transit and have arrived here in badly broken condition.' Their report is dated September 27. Several other reports of a similar character we received which is bad for the trade.'

Comparing the conditions in 1900, as quoted above, with those of 1908 as shown in the following letters from cheese importers in Great Britain, it is evident that an enormous improvement has been brought about in recent years.

Extracts from letters received by the Dairy and Cold Storage Commissioner's Branch from importers in Great Britain.

From Lovell & Christmas, Limited, London, dated January 4, 1909.

In reply to yours of the 2nd inst., speaking from our personal experience, the percentage of heated cheese throughout the past season has been practically nil. During the warm weather we brought all our cheese in cool storage, at a small additional freight, and found this precaution was of great advantage, because the cheese arrived here in perfect condition, and the saving in the weight (shrinkage) almost, if not quite covered the extra expense incurred by having the cheese in cool, instead of ordinary, stowage.

In our opinion there has been a vast improvement in the carrying of cheese during the last 10 years, and as far as the past season is concerned, we do not think it could well have been improved on. We believe this is the general feeling of the trade here especially on the part of those who have taken advantage of the cool storage on the vessels.'

From Rowson, Hodgson & Co., Ltd., London, dated January 7, 1909.

Heated Cheese.—Our experience is that only a limited quantity of the imports from Canada this season have shown any external or internal signs of heat—we should not think 5 per cent of the entire quantity received into the country, whereas 10 years ago probably fully 25 per cent of the goods arriving suffered from the defect referred to.

Regarding the ocean carriage and landing of butter and cheese, so far as London is concerned there has been a gradual improvement during the last 15 years, and more especially since the time that the 'cool air' storage has been adopted on two lines of steamers, viz., the Thomson and the Allan lines.

From Herbertson & Hamilton, Glasgow, dated January 15, 1909.

'We have pleasure in reporting that our shipments of Canadian cheese received the past season show a distinct improvement both in condition and quality compared with previous years, and are a great advance in all respects with what we were receiving, say ten years ago.

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From Andrew Clement & Sons, Ltd., Glasgow, dated January 19, 1909.

'In 1908 heated cheese were too few to do any harm worth mentioning, and the present carrying arrangements are about as near perfect as we can reasonably expect.'

From H. H. & S. Budgett & Co., Ltd., Bristol, dated December 18, 1908.

'As regards condition, we are pleased to be able to report favourably taking the season as a whole, no cases of heated or badly carried cheese having come under our notice.'

From Price & Parker, Bristol, dated December 20, 1908.

'In reply to your inquiry respecting condition on arrival of Canadian cheese this year, we beg to say that, with regard to summer heating, we have had no cause to complain whatever as every particle has been landed in good condition in that respect.'

From Pullin, Thomas & Slade, Bristol, dated January 13, 1909.

'As far as the carrying is concerned we consider the past year one of the most satisfactory; we have had only one or two parcels during the whole season showing the slightest signs of heat, besides which we are confident the boxes on the whole have arrived in a less damaged condition than they sometimes have.'

From Co-operative Wholesale Society, Ltd., Manchester, dated January 8, 1909.

'For some years we have with pleasure found a gradual improvement in the condition of cheese on arrival in Liverpool. Which can, I take it, be ascribed to the improved means of transport, both rail and steamer service. We practically have had no cause for complaint especially during the past two or three years.'

From Bamford Bros., Liverpool, dated January 13, 1909.

'We are in receipt of your enquiry of the 7th inst. re the conditions of the Canadian cheese which we have received during the past season as compared with previous seasons. We are pleased to say that during the past season we have received very few cheese in a heated condition. We also find that the boxes are landed here in a better condition than what they were a few years ago, the only exception as to this being the cheese from the Quebec section. The boxes of these goods as a rule are more broken than cheese consigned from further west.'

From Frank Hamilton & Co., Liverpool, dated January 19, 1909.

'Taking transportation first, there can be no question whatever but that improvements in this direction have been greatly to the advantage of all shippers of perishable goods.'

As you are no doubt aware, our firm has been for over 20 years personally represented in the port of Montreal during the shipping season, and we are therefore in a position to appreciate to the full the efforts your government have made to minimize the losses to shippers caused by neglect and delay at the ports of shipment. It is not so many years ago that a walk along the docks of Montreal would disclose thousands of barrels of apples piled in the open and exposed to the effects of the weather, both hot and cold, and the bottom tiers often covered with mud or coal dust.

The steamers in those days only carried some 5,000 to 10,000 barrels of apples apiece and the shutting out of goods was the rule rather than the exception. It was no uncommon thing to have a through bill of lading in our Liverpool office a month before the goods put in an appearance. Such a state of things is now impossible. Montreal being equipped with some splendid cargo sheds which will compare favourably with those of any other port in the world, and as the railway tracks run alongside, the handling of goods has been reduced to a minimum. In conjunction with these improvements the class of steamer using the port is also improved and it is seldom that perishable goods are shut out.

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The recent concession of your government to fruit shippers of free icing of cars during transit has had a beneficial effect on the condition of the fruit arriving at port of export.

On the whole the transportation conditions to-day are tremendously ahead of what they were some years ago, and in consequence better results are obtained when the goods are sold on the British markets.'

This very marked improvement is not all due to better transportation facilities. We must credit several things with a share. The cool curing of cheese, the use of iced cars, more general cool storage at Montreal, the cooled air and forced ventilation on the steamers, cool storage at the ship's side in Great Britain, have contributed to help along the good work.

Q. Cheese do not go in cold storage?

A. If the temperature is under 70 degrees cheese will not show a heated, greasy condition. The grease does not exude from the cheese until the temperature rises above 70.

Q. Do you not want any refrigerating system for cheese?

A. Not necessarily. It does not make any difference what the system if the temperature can be kept down to what it should be below 70 degrees.

By Mr. Broder:

Q. Has there been any trouble owing to the cheese being too green?

A. Yes, there have been a good many complaints about that. That is the chief complaint about our cheese at the present time.

Q. The factories are largely to blame for that?

A. Yes, they control the situation. I would like to say that we have also been trying to improve the shipments of cheese on the river boats throughout Canada and I think we have had some results from those efforts also. I will give you one instance. There is a boat which travels on the St. Lawrence carrying nothing but cheese during the hot weather. The shippers complain that the service is not as good as it should be and ask us to make some arrangements to put cold storage in that boat. I had an interview with the owners of the boat and made an arrangement to send one of the inspectors to take a trip on it. He found this condition: between the hold where the cheese was stored and the boiler room there was a thin partition and the heat that was coming through there was heating the whole cargo space, and a steampipe which ran some part of the machinery extended right along under the deck through this space in which the cheese was carried. It is strange that people do not see these things and remedy them. We suggested to the owners of the steamer that the steampipe should be put on the deck and the bulkhead insulated. That was done and it made a very great difference in the accommodation that vessel was able to give for the carriage of cheese. I mention that as an instance of how our system of supervision enables us to effect very simple and yet very necessary improvements.

By Mr. Broder:

Q. Would you also recommend the same sort of steamer service for fruits from Niagara?

A. I am afraid it would be too slow. They want to get the fruit down from there in one night.

General.

In concluding, I would like to refer to the general work of the branch. I have been most fortunate, and the department has been fortunate, in having among the officers who assist me, several men so capable as those to whom I have already referred. Mr. McNeill, Mr. Moore and Mr. Barr carry on the detailed work of their several divisions with such ability, devotion to duty and singleness of purpose, that

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they have won the confidence of all whom we are trying to assist. Mr. Whitley, in charge of the dairy records, is doing excellent work, and so are others, occupying minor positions.

We have in addition to the work which I have been referring to a very large amount of correspondence on technical subjects. People write to us inquiring for information on all sorts of subjects and the careful and conscientious answering of such letters takes up a good deal of time. Then during the winter and at certain other periods of the year, a large number of meetings are attended and addresses delivered. I sometimes think that we spend too much time talking and not enough on illustration work, but there is no doubt these meetings which are held do something to stimulate and encourage people to go on improving in various ways. The last year or two we have been making a rather extensive use of the lantern to illustrate our subjects and we find that very useful indeed. Now the last thing I have to refer to is our publications.

By Mr. Sproule:

Q. Before you deal with that I would like to ask if you had many prosecutions for violations of the Fruit Marks Act last year?

A. Not as many as the previous year, but there were quite a few.

Q. Are they set forth in your report?

A. Not for the past season, but previous seasons' records are there. There have been 70 convictions so far this year. A few more are pending.

By Mr. Armstrong:

Q. How many inspectors have you?

A. There were 21 last year. These officers are Dominion inspectors and work anywhere they are sent. We had three new inspectors last year in addition to those employed previously.

Q. Do you not find a great many representations coming in urging on the department the necessity of appointing more inspectors?

A. We had quite a number of requests for additional inspection from men who would like to have the department supervise their packing, but, of course, there is no intention of doing anything of that kind.

Q. I can quite understand that, but you must know that a large portion of the fruit going out of the country is not inspected at all?

A. Not a very large portion of it. Take this year, the inspections covered lots containing 694,000 packages of fruit up to the present date. I don't say that every one of these packages was inspected, but the inspection covered lots containing that number of packages of fruit which is a very large proportion of the fruit shipped.

By Mr. Marshall:

Q. I am not clear as to the financial assistance for refrigerator cars, is that for fruit exporters?

A. The \$5 per car for icing charges is paid only on fruit intended for export in cold storage.

Q. It does not apply to fruit shipped from one point to another in Ontario?

A. No.

By Mr. Burrell:

Q. Is provision made in the Act for the erection of cold storage warehouses for fruit in the same way and to the same extent as for other products?

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A. There is no provision in the Cold Storage Act for the erection of warehouses for the handling of fruit only.

Q. Then fruit warehouses are not given similar assistance?

A. The Cold Storage Act provides for the payment of 30 per cent of the cost of general cold storage warehouses, which includes fruit.

Q. To what extent is it being used?

A. The 30 per cent subsidy?

Q. Yes?

A. There have been no warehouses erected yet for the special purpose of caring for fruit under the terms of the Act. They have all been general cold storage warehouses, some of them with large space for the storage of fruit. One warehouse has been erected in New Brunswick which will handle about 100,000 barrels of apples and others are proposed in the maritime provinces with about the same capacity. Most of the warehouses have provisions for handling apples as well as other products. They have rooms in which the temperature can be controlled for goods that require freezing temperatures and other rooms in which fruit, cheese, or anything of that kind can be stored.

Q. Are there any applications from British Columbia?

A. Yes.

Q. For cold storage warehouses?

A. Yes, but no contract yet though there is an application in.

Q. From where?

A. Victoria.

Q. There are none from the Okanagan Valley?

A. No.

Hon. Mr. FISHER.—I might say that the Cold Storage Act implies—I forget the exact words—that the cold storage to be subsidized must provide for all kinds of perishable products. The Act does not contemplate storage for one particular product although that is one of the points I was discussing with my officers and with others, and that is what I referred to a few minutes ago. The intention of the Act was a general cold storage accommodation. Referring to a copy of the Act which has just been handed to me, it says, 'equipped with mechanical refrigeration in Canada and suitable for the preservation of all food products.' That seems rather to interfere with the giving of a bonus to cold storage avowedly for only one purpose and that is one of the points I am discussing and considering at the present time.

By Mr. Sproule:

Q. Am I correct in understanding that not many in Ontario have taken advantage of this arrangement and are erecting buildings? Were there not some on the Georgian Bay that got assistance?

A. There is an application in for Owen Sound at the present time.

Q. From Thornbury?

A. No, there is just the one. If the committee would like to have the names of the applicants for the cold storage subsidy provided for in the Cold Storage Act I can give them. There is the New Brunswick Cold Storage Company, St. John, N.B., first and second instalments paid; Scott, Ashton & Co., Morrisburg, Ont., contract made but no work done on building. Edmonton Produce Company, Edmonton, Alta., made application, but the work has not been undertaken. The B. Wilson Co., Ltd., Victoria, B.C., made application and are building a warehouse. No contract entered into yet. Scott & Hogg, Peterboro, Ont., contract made and they have received their first instalment. The Halifax Cold Storage Co., Port Hawkesbury, N.S., have received the first and second instalments on their work. The Trenton & Atlantic

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Storages, Trenton, Ont., signed a contract and intended to build last year, but failed to do so. They will probably build a warehouse this year. Cold Storage, Ltd., Woodstock, N.B. Completed warehouse and received first instalment. The J. D. Moore Co., Ltd., St. Mary's, Ont., have signed a contract, but have decided not to go on with the work at present. There is an application for a large cold storage warehouse at Prince Rupert, B.C., from the Canadian Fish and Cold Storage Co., Ltd. It is intended for the fish business, but has not yet been dealt with or considered. There are three applications for cold storage warehouses in Halifax, but no contract has been made yet and the thing has not been settled. The firms are the Acadia Cold Storage Co., Ltd., the Nova Scotia Cold Storage Co., and the Atlantic Cold Storage Co. There is an application for a warehouse in Prince Albert, Sask., from R. T. Treen. It is being considered and there is no reason why a contract should not be made. An application was received from the London Cold Storage Co., London, Ont., but the warehouse was not eligible under the Act for the subsidy, having been in existence for several years. These are all the applications received to date.

Mr. MARSHALL.—I was going to ask the Minister of Agriculture if the Act would apply to a company like ours? We have built a storehouse for our own use.

Hon. Mr. FISHER.—No, you must provide public accommodation, the accommodation must be for the public.

Mr. MARSHALL.—Of course, it would be in a sense for the accommodation of the public.

Hon. Mr. FISHER.—But the Act requires that the cold storage accommodation must be available to anybody who wishes to put perishable products there and the rates to be charged are subject to the approval of the department.

Mr. MARSHALL.—Can you build any sized warehouse and still claim the bonus for it?

Hon. Mr. FISHER.—The plans and specifications have to be submitted and the question of meeting the demands of the trade in the locality has to be considered by the Cold Storage Commissioner so that the public may be given the advantages.

Mr. BRODER.—It has to be looked at from the public advantage side.

Hon. Mr. FISHER.—It has to be looked at from the public advantage side and anybody who gets this bonus is expected to meet the trade conditions of the neighbourhood. That has to be considered in deciding the question.

By Mr. Armstrong:

Q. Before Mr. Ruddick leaves the Extension of Markets Branch would he tell us what he is doing in connection with the extension of markets in other countries?

A. I did not mention that feature of our work, because I wanted particularly to refer to the Inspection Service, but we have had a great deal of correspondence with exporters in Canada and with merchants abroad and have done a good deal I think to bring these together in various ways. Some assistance has been given in that direction by publishing a list of exporters of some Canadian food products and also lists of British importers of Canadian products. We find a considerable demand for these publications.

Q. Is there any attention being paid to our getting into the German market?

A. That does not come under the province of this division of the Department of Agriculture.

By Mr. Broder:

Q. I was noticing in a report issued by the Trade and Commerce Department some complaints about apples in Australia from our agents there, that they arrived in very bad condition. I do not know whether they were private shipments or not?

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A. You are not thinking of South Africa, are you?

Q. I beg your pardon, it was South Africa I think?

A. They have very stringent regulations in South Africa in regard to the importation of fruit. We find that some shipments that have gone there this year have contained too many codling moths to suit their regulations. I think they have a limit of 10 per cent and if they find more than that quantity of the apples affected with codling moths they confiscate the shipment.

Q. The apples may appear a great deal better when they leave here but perhaps the moth is working among them all the way and they look much worse upon arrival there?

A. There may be something in that, but the trouble is sufficient care is not taken to ship fruit of the proper grade and quality.

By Mr. Sproule:

Q. Could you give us any information as to the rates on steamships using cold storage as compared with the rates on steamships in which food products are shipped in the ordinary way?

A. I have not got the rates here and I would not like to speak from memory, as they are frequently changed.

The CHAIRMAN.—I think it is 25 cents difference between ordinary storage and cold storage, that is on apples.

Mr. SPROULE.—I mean on all lines.

Mr. RUDDICK.—The rate is about 10 shillings a ton extra on butter, but that is shipped in cold storage. They charge 5 shillings a ton more for cheese kept in cool air.

By Mr. Gordon (Kent):

Q. Ton measurement?

A. Ton measurement.

By Mr. Armstrong:

Q. Has any reduction been made in the last year or two as between cold storage and ordinary storage?

A. The rate varies from time to time, but I am not aware that there has been any reduction in the difference between the ordinary rate and the cold storage rate.

Mr. RANKIN.—I would like to ask what the prospects are of developing a dead meat trade between this country and Great Britain. Argentina has taken up a very large trade of this kind and as we are nearer the market than they are we ought to be able to do the same.

Hon. Mr. FISHER.—That is a question which has been discussed lately in the live stock meetings and were deliberated at some length last year at the meeting of the Dominion Live Stock Association here in Ottawa. My personal opinion and it is only my personal opinion, is that there are two reasons why there is no such trade. The first is that the trade with England is in the hands of the men who ship live cattle and they have no desire to change their methods. The second reason is, and I think myself it is really the fundamental one, that for the purpose of establishing a dead meat trade it is necessary that we should be able to give a continuous supply. That we cannot at the present time get from Canada. We can send a large quantity for a month or two, possibly. Then for other months we would have none to send and the market seems to require a continuous supply. Until that difficulty is overcome I do not think there is any possibility of establishing a dead meat trade in Can-

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ada. I might say that a number of people are very much interested in it and are very desirous of establishing such a trade. My own mind has been on it for some time, but I have been confronted with that difficulty and I do not see any way at present of overcoming it.

Mr. SPROULE.—We used to have a pretty continuous supply of live animals?

Hon. Mr. FISHER.—Not a continuous supply. There are very large shipments at some periods of the year and practically none at others.

Mr. BRODER.—Private capital will have to undergo the risk and make the experiment.

Hon. Mr. FISHER.—Some private individuals have tried to establish a dead meat trade and failed. The William Davies Company, some years ago set aside a considerable amount of money—I have forgotten the exact amount, but I think it was \$25,000—and said they were prepared to lose it in the hope of establishing a trade. They did lose it and did not establish a trade. I understand lately that Mr. Flavelle, who is at the head of that concern, was again discussing the possibility of establishing such a trade. His company is one with a large capital and a thorough understanding of the whole business, and if they cannot succeed there is no possibility of anyone else meeting with success. They are in a better position to succeed than anyone else would be.

A cordial and unanimous vote of thanks was accorded Mr. Ruddick for his address.

The committee adjourned.

Having read over the foregoing transcript of my evidence, I testify the same to be correct.

J. A. RUDDICK,
Dairy and Cold Storage Commissioner.

FRENCH CANADIAN CATTLE

HOUSE OF COMMONS,

COMMITTEE ROOM No. 34,

FRIDAY, MARCH 19, 1909.

The Select Standing Committee on Agriculture and Colonization met here this day at 11 o'clock a.m., Mr. Schell, Chairman, presiding.

The CHAIRMAN.—We are to have an address from Mr. J. H. Grisdale on 'French Canadian Cattle' this morning. We are always pleased to hear him because he is a great authority on stock raising.

THE FRENCH CANADIAN COW.

MR. GRISDALE.—Mr. Chairman and Gentlemen. The subject that I am to take up is one which has attracted considerable attention in this country of recent years and one which is, I think, destined to draw still more attention to itself in the near future in dairying parts of Canada.

It is probable that French cattle were first brought to Canada in or about the year 1620, some ten or twelve years after the founding of Quebec City. That the cattle first brought over were similar to those now found in many parts of the province is indicated by a passage in the memoirs of M. de Tracy, Intendant, and M. de Courcelles, Governor. These men were sent out in 1665 and brought with them some cattle. On reaching Quebec they reported finding cattle similar to those they brought, black and fawn in colour. Cattle of this colour were at that time to be found in Brittany and Normandy. In Brittany, some parts of Normandy, Jersey, Guernsey and Ireland are to be found even to-day cattle similar in many ways to those known here as French Canadian cattle. There is no doubt that these cattle in the different countries I have mentioned came from the same original stock since a strong similarity can be traced in all the breeds—French Canadians, Jerseys, Guernseys, Kerrys, Dexter Kerrys, and some breeds or strains of Normandy cattle.

To-day in Quebec province we find them the most commonly and almost as the sole breed of cattle in that part of the province along both shores of the St. Lawrence below Quebec City, and in the Lake of St. John district. Besides this they are to be found here and there throughout the counties west of Quebec city, some counties being especially remarkable for the large number of these cattle that are to be found on the farms. I might mention particularly in this connection the northern part of Berthier county in the district of Joliette.

The purebred herds of repute are not confined to any one district but are to be found even in the Eastern Townships, some in the counties south of Montreal, some north of Montreal and some as far north as Lake St. John. A description of these cattle could probably best be given by submitting the scale of points recently prepared by some of the best breeders and accepted I believe by the Association.

SCALE OF POINTS.

BULLS.

Dairy Temperament.

| | Points. |
|---|----------|
| Head.—Lean, masculine in appearance, and of fine contour.. . . . | 3 |
| Neck.—Rather long muscular and somewhat arched, proud and vigorous in bearing | 3 |
| Shoulders.—Light and spare; withers sharp | 3 |
| Crops.—High, straight and sharp | 2 |
| Spine and Ribs.—Spine prominent, but not to same degree as in cow; vertebræ and ribs open spaced.. . . . | 3 |
| Thighs.—Thin and incurving; flank high | 3 |
| Pelvic arch.—Prominent, strong and sharp | 2 |
| Tail.—Long and tapering.. . . . | 1 |
| | <hr/> 20 |

Feeding Powers.

| | |
|--|----------|
| Barrel.—Depth from line of back to navel.. . . . | 10 |
| Length of body from shoulders to hook.. . . . | 7 |
| Breadth of body through middle | 6 |
| Muzzle.—Broad; jaw strong | 2 |
| | <hr/> 25 |

Disposition.

| | |
|---|---------|
| Eyes.—Large, prominent, bright, intelligent and placid | 3 |
| Face.—Broad between eyes | 1 |
| Movement of ears and body.—Rather slow, not restless | 1 |
| | <hr/> 5 |

Quality.

| | |
|--|----------|
| Skin.—Loose, thin, mellow with fine soft hair | 6 |
| Deep yellow in ears and on and around escutcheon.. . . . | 4 |
| | <hr/> 10 |

Dairy Indications.

| | |
|--|---------|
| Embryo teats.—Not less than four well developed embryo teats, well forward and well apart, with amplitude of skin on rear part of under- line | 3 |
| Escutcheon.—High and wide | 2 |
| | <hr/> 5 |

Constitution.

| | |
|---|----------|
| Chest.—Deep; wide through heart, full behind and a little above elbows large girth of chest | 6 |
| Nostrils.—Large, open | 2 |
| Loins.—Broad | 2 |
| | <hr/> 10 |

Symmetry.

| | |
|---|----|
| Horns.—Not large nor coarse; curved; black or black with white tips, or vice versa | 1 |
| Legs.—Rather short, straight and well placed | 2 |
| Colour.—Black, or dark brown, preferably with brown, fawn or cream coloured muzzle and brown, fawn or yellow stripe on back | 10 |

General Appearance.

| | |
|---------------------------------------|----------|
| Including style and movement | 12 |
| | <hr/> 25 |
| Total.. . . . | 100 |

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Cows.

Dairy Temperament.

| | |
|---|-------|
| Head.—Lean; long, feminine and refined in appearance | 3 |
| Neck.—Thin; rather long, ewe-necked.. . . . | 3 |
| Shoulders.—Light and spare; withers sharp | 3 |
| Crops.—High; straight and sharp | 3 |
| Spine and ribs.—Spine prominent; vertebrae and ribs open spaced.. . | 3 |
| Thighs.—Thin and incurving; flank high.. . . . | 5 |
| Hip joints and pin bones.—Sharp, angular | 2 |
| Pelvic arch.—Prominent, strong and sharp.. . . . | 2 |
| Tail.—Long and tapering.. . . . | 1 |
| | <hr/> |
| | 25 |

Feeding Powers.

| | |
|--|-------|
| Barrel.—Depth from line of back to navel | 10 |
| Length of body from shoulders to hook joints | 7 |
| Breadth of body through middle | 6 |
| (Period of gestation to be considered.) | |
| Muzzle.—Broad; jaw strong | 2 |
| | <hr/> |
| | 25 |

Mammary Organs.

| | |
|--|-------|
| Udder.—Long, broad and deep, extending well forward and well up behind, well let down, but not pendulous; all quarters fully and symmetrically developed; fine and elastic; not fleshy; teats well placed and wide apart | 15 |
| Teats.—Rather large; equal in size; not cone shaped.. . . . | 2 |
| Milk wells.—Numerous, large and far forward | 4 |
| Milk veins and veins on udder.—Prominent and branching | 3 |
| (Age to be considered.) | |
| Escutcheon.—High and wide with thigh ovals | 1 |
| | <hr/> |
| | 25 |

Disposition.

| | |
|--|-------|
| Eyes.—Large, prominent, bright, intelligent and placid | 3 |
| Face.—Broad between eyes.. . . . | 1 |
| Movement of ears and body.—Rather slow not restless | 1 |
| | <hr/> |
| | 5 |

Quality.

| | |
|--|-------|
| Skin.—Loose, thin, mellow, with fine soft hair.. . . . | 3 |
| Deep yellow in ears and on and around escutcheon | 2 |
| | <hr/> |
| | 5 |

Constitution.

| | |
|--|-------|
| Chest.—Deep; wide through heart; full behind and a little above elbows, large girth of chest | 3 |
| Nostrils.—Large, open.. . . . | 1 |
| Loins.—Broad | 1 |
| | <hr/> |
| | 5 |

Symmetry.

| | |
|---|---|
| Horns.—Not large nor coarse; curved; black or black with white tips, or vice versa | 1 |
| Legs.—Rather short; straight and well placed | 1 |
| Colour.—Black or dark brown, preferably with brown, fawn or cream coloured muzzle, and brown, fawn or yellow stripe on the back . . | 2 |

General Appearance.

| | |
|--|-------|
| Including style and movement | 6 |
| | <hr/> |
| | 10 |
| | <hr/> |
| Total | 100 |

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I might further say a few words descriptive of the breed. To make things clearer, let me submit for your inspection a number of photos of our herd at the Central Experimental Farm and of groups or individuals from other herds.

The cattle are, as a rule, rather small, the head is generally speaking fine cut, rather short and broad in the forehead; eyes clear and bright, horns rather long, and slightly up-curved, white with dark points, the muzzle usually strong and surrounded with a fawn ring. This fawn ring is distinctive of the breed. To-day, also, we like to see a rather light shade or line along the back. The neck of the animal is, generally speaking, of good length, rather slight and firmly attached to the shoulders. The shoulder blades are closely attached to the body, back straight, the parts of the back, the vertebræ, well separated and the ribs well curving and widely separated. The cows are generally remarkable for good feeding qualities having a good big barrel and roomy digestive organs indicating their great capacity as machines for turning out milk. There is no tendency to lay on flesh in this breed and it must be distinctly understood that it is not a breed that is likely to be of much value for beef production. The udder is usually well attached but quite often irregular in shape, teats good. They are good handlers having nice mellow skin.

HISTORY OF THE BREED.

Continuing the history of the breed, I might say that till 1850 they were practically the only cattle to be found in Quebec. There were a few herds here and there near the large cities, of Ayrshires and Shorthorns, but very few indeed, and the average French Canadian farmer knew no other breed than his own little French Canadian cow. Of course, I must say too, that at that time not nearly so many cattle were kept in the province of Quebec as is the case to-day.

In 1853 the Council of Agriculture was organized in the province of Quebec and that council set about the work of discouraging the farmers in the breeding of these cattle and attempted to persuade them to introduce some of what they called the better dairy breeds. Ayrshires, Jerseys and Shorthorns were introduced, or attempted to be introduced, in all parts of the province under the direction of this Council of Agriculture. They effectually persuaded the French Canadian farmer that his French Canadian cow was utterly useless, so that by the year 1880 there was hardly a French Canadian in the province that thought enough of his cow to give her any more attention than he would to a dog. At this juncture however two or three men who were interested in the live stock of the country made a change in the line of effort.

These men were Mr. E. A. Barnard, Director of Agriculture for the province, Mr. S. Lesage, Deputy Minister of Agriculture, and along with these, Dr. J. A. Couture, whom doubtless you all know to a greater or less extent. These men in 1881 or thereabouts, started a campaign in favour of the French Canadian cow, trying to rehabilitate this animal in the favour of the people. They worked so assiduously that by the year 1886 they had managed to have a herd-book opened. This herd-book was held open for ten years for reception of foundation stock. Men travelled all through the province inspecting animals that were offered for entry by farmers here and there throughout Quebec and on the payment of a fee, these animals, if found to conform to the requirements of the herd-book, were admitted temporarily, at least, to enregistrement in the herd-book. They were reinspected a year or so later, especially in the case of females, to see if they were turning out as they had promised. Of course in the case of old females this matter of reinspection received less attention, but young cows and heifers, were again examined to see if they were producing according to promise.

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By Hon. Mr. Fisher:

Q. I think there was a rule that no female that had not produced ten pounds of butter in a week should be entered at a certain age?

A. Yes. I do not see it in the herd-book regulations at the present time, but I believe in the case of heifers they had to produce a certain amount of produce a day before they were accepted. That was the reason why they were inspected a second time.

At the end of the year 1896 the herd-book closed and since that time only such cattle as are direct descendants from animals registered previous to that date have been admitted for registration.

Since the inception of the effort to improve the breed in the province of Quebec a good many men have devoted considerable attention to it. I might mention particularly Dr. J. A. Couture, who organized the effort and has kept on urging or persuading farmers to make every effort to get their herds registered and to keep them registered up to date. He has also done all he could to get new men into the work. Since the beginning one of the greatest difficulties has been to get breeders to keep their herds registered up to date. Many men made a start, but since that time have been neglecting the registration of their animals. Dr. Couture has worked assiduously to get them to continue this registration.

Another man who made his mark in connection with this work, is Mr. Arsène Denis, of St. Norbert, Berthier county, Que. Mr. Denis has probably made greater progress in breeding French Canadian cattle than any other breeder in Canada or anywhere else. He has apparently a remarkable eye for what will give good results in breeding, and he discovered as it were and brought into use some of the most pre-potent and strongly marked sires, that have ever been used in the breed. As two instances, I might mention the bulls Prince Elegant and Vainqueur.

These are two bulls which he found somewhere and brought into his herd. By using them he has done more to build up the breed than by any other single step that has ever been taken.

The Hon. Mr. Garneau took a prominent hand in this matter and did a great deal in advocating the interests of the breed. I do not know that he has done a great deal in breeding, he has had a small herd, but he did a great deal of advocating.

Mr. Louis Laval, of St. Guillaume, bred a very good herd and was one of the prominent men in the establishment of the herd-book.

Mr. Louis Thoin has one of the best herds in the province and is still working most industriously. He is a regular dairy farmer, not putting into it quite all the science or knowledge in breeding or in feeding that we might like to see, but still doing exceedingly good work. Amongst the photographs which have been distributed you will see a large one representing some cows from the herd of Mr. Louis Thoin. There are seven or eight of them, remarkably good specimens of the breed.

Then we have Mr. J. Dugas and his brother, Father Dugas, who have done a good deal in Joliette county to improve the breed.

Mr. G. Garceau, Trois-Rivières, Que., is a man especially worthy of notice at the present time. He is the only one who is making an effort to prove these cows to be a commercial success. The other men have been and are breeding largely from the average farmer's standpoint or from the showman's point of view trying to make the French Canadian cow pay her way and a little bit better. Mr. Garceau, however, is trying to see what she can do as a money maker. We receive records at the Experimental Farm from all over Canada showing how many gallons of milk and how many dollars worth have been produced by herds of Jerseys, Guernseys, Ayrshires, Holsteins or other breeds, and Mr. Garceau is doing the same thing with his herd of French Canadian cows. I might say that he has done well in this, as you will see in a few minutes when I give you some of the results.

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Mr. L. P. Sylvestre is another man who has done a good deal to improve the breed. He is located at Acton Vale, Que., and has a very fine herd.

Between here and Montreal, at the Trappists Monastery, there is one of the best herds of the kind that can be found.

Mr. Guay, of Lake St. John district, also owns a very fine herd and another is owned by Les Sœurs Ursulines, Roberval. All these people have done excellent work.

Here is a letter from Mr. Garceau, which I think might be of interest to you. It is in French, but I will translate it:—

‘I am of the opinion that this cow is the best that can be used by the average farmer in the province of Quebec for the reason that she is the most easily kept, because she is the hardiest and because she consumes the least food for the amount of produce yielded.’

He says that when he started out with his herd a few years ago the average cow gave a yield of from 2,500 to 3,000 pounds of milk a year. Now his heifers give over 5,000 pounds and his aged cows from 7,000 to 9,000 pounds a year. This is the man I spoke of as building up his herd and making it a marked commercial success and who has not been satisfied just to keep on as the average farmer does.

SOME FAMOUS FAMILIES IN THE BREED.

Some of the most famous families in this breed are as already indicated descended from Prince Elegant, a bull that was discovered by Mr. Arsène Denis. This bull was used quite extensively and his progeny is spread all over Eastern Canada. After Mr. Denis had used him for some time he was shipped to the Lake St. John region, where he was again used for many years, so that there is no doubt that one-half of the stock of French Canadian cattle left to-day have more or less of Prince Elegant—56—blood in them.

To show you the extent to which this blood has been used; I have here an extended pedigree of a young bull, Prince Vigilant—885—that we have on the Experimental Farm; he was bred by Mr. T. B. Macaulay, a breeder in the county of Vaudreuil. He has on his dam's side the dam's sire Prince Elegant 2eme—758—by Prince Elegant—56—and four more crosses of Prince Elegant—56. Every sire but one on the dam's side is Prince Elegant—56—or Prince Elegant 2eme—758—showing the extent to which some men have tried to incorporate this blood on the breed. Now as the pedigree shows Prince Vigilant—885— is very remarkably inbred. He is, however, robust in spite of this apparent excessive in-breeding.

Another strain which has taken a prominent part in improving the breed is the Championne family. The Championnes have been bred and developed by Mr. Arsène Denis of St. Norbert. One of them was at the Pan-American coming out first or second there; and now females of this family are to be found all over, easily heading the list both as dairy cows and as show cows.

A family which seems to have originated in Two Mountains is called ‘La Fortune.’ We have one of this family and there are a number in different parts of Two Mountains, Vaudreuil and other counties. The Fortunes are remarkably heavy milkers but not remarkably goodlooking and not as smooth as they might be. One we have gave about 9,000 lbs. of milk in a year testing over 4 per cent. There have been several other quite remarkable families among them one called the Moody cow and another called the Rouen.

THE HERD-BOOK.

To give you some idea of the numerical progress made by the breed I might say that when the foundation herd-book was closed, December 31st, 1896, there were 5,307 cows and 922 bulls entered. By 1905 there had been registered 6,593 females and 746

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bulls. In 1906 there were 128 registrations, in 1907, 194 registrations and in 1908, 167 registrations. The first volume of the herd-book is about to appear. It will contain from 1,556 to 1,600 pedigrees.

The breed has been rather slow in increasing in numbers registered chiefly for the reason that there has been very little demand for the cows. Farmers neglect to register. Many of them appear to think that the only reasons there are for registering at all are to permit them to compete at exhibitions or once in a while when they sell a bull. Sales are not very frequent since the market is practically limited to their own province.

MUCH PROGRESS MADE.

However, much progress has been made, speaking in a general way, in the breed. In the first place the type has been greatly improved by the use of such bulls as Vainqueur, Prince Elegant, Charlemagne and a number of others. A uniform class of dairy cow has been produced. If you will refer to the photographs handed round, you will notice that the animals are very uniform; uniform in colour, in type, in shape and in size.

It is generally supposed that the cow must be a very small one to be a true French Canadian. That is rather a mistaken idea for the reason that we have some large French Canadian cows; in fact most of our herd at the Central Experimental Farm consists of large individuals, particularly large ones. The smallness of certain cows in this breed is probably due to the environment of their ancestors for a few generations previous to the present one, or probably to the method of raising the calves, since poorly raised calves make small cows. However size is not always a criterion of quality since one of the smallest cows of the breed that we know of is one of the best. One small cow weighing only about 650 lb. has the reputation of giving over 11,000 lb. of milk in a year. I cannot vouch for the accuracy of this statement but it is given by Dr. Couture. I think he also is not very sure of the correctness of his figures.

EFFECTS OF STARTING HERD-BOOK.

One effect of the establishment of the herd-book is that more care has been given to the cattle. They are now kept in better shape and are becoming heavier producers. Many new herds have been started, either from the reputation the cattle have already gained as producers or through curiosity quite a number of different countries have made importations of this breed. In our own country we have herds in New Brunswick, Ontario, Nova Scotia, Prince Edward Island, Manitoba, and a herd is at present I believe under consideration for British Columbia.

Quite a number of states through the Union have herds; in fact they have made such progress over there that there is a herd-book organized of which Mr. Colborne is secretary.

A number of our foremost men in Canada have lately established herds. Down in New Brunswick we have Sir William Van Horne and near Montreal, Sir Hugh Allan, the Hon. Lionel Guest and the Hon. Mr. Fisher. A number of other prominent men have taken hold of this breed with a view I suppose in some cases of having something unique, in other cases to see what they can do with the breed and to help it along. Macdonald College, Ste. Anne's, has a herd, and as you will see by the photographs we have a herd on the Experimental Farm which we will be very glad indeed to show you any time you care to come out. No matter how good a description or photographs may be one can never appreciate cattle till one sees them.

HERD RECORDS.

Of course, the way to judge dairy cattle as a breed is by their records. I must admit that this is where the French Canadian breed is weak. We have not enough records behind the breed to give it a high status among the other dairy breeds. This is due, as I have already stated, to the fact that they are largely found in the hands of small farmers who do not make an effort, generally speaking to develop their herds.

But to show you that they are capable of good records let me cite a few instances. The first authentic test that I will give you is that of the Buffalo Pan-American. You are probably more or less familiar with these results, but I might just mention incidentally that five cows in less than six months—I think three weeks less than six months—gave 24,673·4 lb., an average of 4,935·7 lb. of milk per cow. The same five cows gave an average of 205 lb. of butter in that time. This is not a remarkable amount and a good many of the other breeds passed that, but where the Canadians had the advantage was in the economy of production. The cost of producing 100 lb. of butter or milk with these cattle was considerably less than with most of the other breeds.

The cost of feed to produce 100 lb. milk was as follows for the different breeds:—

| | |
|----------------------------|-------------|
| French Canadians | 45.8 cents. |
| Jerseys | 51.0 “ |
| Guernseys | 50.5 “ |
| Ayrshires | 44.0 “ |
| Holsteins | 41.0 “ |
| Shorthorns | 54.0 “ |

The cost of feed to produce one pound butter was as follows for the different breeds:

| | |
|---------------------------|--------------|
| French Canadian | 11.03 cents. |
| Jerseys | 13.16 “ |
| Guernseys | 11.11 “ |
| Ayrshires | 11.61 “ |
| Holsteins | 13.18 “ |
| Shorthorns | 14.22 “ |

From which it will be seen that while the French Canadians stood third in rank as cheap producers of milk, they easily stood first as cheap or economical producers of butter.

INDIVIDUAL RECORDS AS TO MILK PRODUCTION.

Then we have individual records. Take the record of Fancy—6252—bred and owned by Mr. T. B. Macaulay of Vaudreuil County. This cow has found her way into the ‘Advanced Registry,’ the first report of which has just been published. She made a record of 7,425½ lb. of milk showing 4·3 per cent of fat, giving 318 lb. of fat, equivalent to 375·05 lb. of butter in a year. The requirement for admission to the ‘Advanced Registry is 306 lb. of butter, so you will see that she was considerably above the registration requirements.

At the Experimental Farm where we have had these cattle for 6 or 7 years we have records made by quite a number of them. Here are a few:—

Fortune D’Oka, belonging to the Fortune family gave us 8,734 lb. of milk testing 4·66 per cent of fat or 468·60 lb. of butter in one year. I might just mention that this is the third highest record we have on the Farm where we keep Guernseys, Ayrshires and Shorthorns.

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By Mr. Owen:—

Q. Do you give them extra food or just the average food a cow would receive?

A. We feed our cows according to the milk they are producing. For instance we have one cow at present giving 60 pounds of milk. She is getting about 15 pounds of meal or about one pound of meal to four pounds of milk. This is our ration approximately. To continue with the records:

Zamora, a cow we got from the Lake St. John district gave us 7,694 pounds of milk testing 4.96 per cent of fat, or 448 pounds of butter in one year.

Exilee gave 8,628 pounds of milk testing 4.10 per cent of fat or 416.90 pounds of butter in one year.

Poupee gave 7,505 pounds of milk testing 4.0 per cent of fat, or 359 pounds of butter in one year.

Inoquette, a cow from Joliette, gave 6,479 pounds of milk testing 4.1 per cent of fat, showing 316.65 pounds of butter with her first calf. This is a good record, no matter what the breed might be, Ayrshire, Holstein or any other.

Duchesse 2eme gave 5,749 pounds of milk testing 4.1 per cent of fat giving 303.64 pounds of butter with her first calf.

Then there is the cow I mentioned a little while ago as being the smallest one of the breed that I know of. She is called Pruniere and is reported to have given 11,310 pounds of milk in 318 days and only 11 months between calves. I am inclined to take that with a grain of salt since I saw the ration that was supposed to have been consumed by the cow and it seemed to me quite inadequate.

COST OF PRODUCTION.

Now as to the cost of production. The amount that the cow will produce is one thing; the cost of production is for the farmer another exceedingly important thing and quite another matter. I might make a cow produce 20 pounds of butter a week but it might be done at a loss or might be done at a profit. Now in comparison with other breeds on the Experimental Farm this cow can hold her own.

I have here the results for six years in comparison with Ayrshires, Guernseys and Shorthorns. In that period of time it has cost on the average 52.36 cents to produce 100 pounds of milk for the Ayrshire, 63.47 cents for the Guernsey, 68.47 cents for the Shorthorn and 57.64 cents for the French Canadian cow. You will see that in the cost of producing milk the French Canadian stands second. Now then in the case of butter. The cost of a pound of butter produced by the Ayrshires has been 11.38 cents; by the Guernseys, 10.97 cents; by the Shorthorns, 14.54 cents; and by the French Canadians, 10.84 cents. That you see is somewhat lower than any of the other breeds for butter. Some years our French Canadians made very much better records than that. One year they made a bad record due to a change in the date of the sitting of the House of Commons. That seems rather strange does it not, but that is how they came to make a bad record.

By the Chairman:

Q. Was it owing to the long session?

A. They changed the date of the sitting and we had to change the dates of the record. We had to leave out nine months. These were the best nine months for milk and the worst for feed and it changed the entire record for that year. Just to show how it affected them that year, it cost 78.90 cents to produce 100 pounds of milk and 14.40 cents to produce a pound of butter. Now the other breeds were similarly affected but not so seriously as in the case of the French Canadians.

In order to reach a basis of comparison we take the best three records of the year in each breed.

Now you will see that the French Canadian has held her own in comparison with these other breeds which are supposed by the average farmer and by the average French Canadian farmer, I regret to say, to be very much superior to the French Canadian cow. My experience is that as producers those other breeds are not at all superior to the French Canadian cow. I am not saying that the French Canadian cow is superior to them either, but I think she is worthy of a place in point of production with any of the other breeds.

RECORDS—KEPT BY FARMERS.

By Mr. Owen:

Q. Are the other breeds more hardy than the Canadian cow?

A. No. I will take that up in a minute. There are not many records kept by farmers, as I have already stated, and it has been difficult to persuade the breeders of these cattle to keep records. I have tried over and over again to get them to keep records, but have succeeded in inducing only one man to do it. Let me show you what that man has done. The man in question is Mr. Gédéon Garceau, Three Rivers, Que., whom I have already mentioned. Some eight years ago he was sending his milk to a cheese factory near his home, Pointe du Lac, and was getting from his cows somewhere between \$25 and \$30 a cow. He tried to get the factory people to pay according to the percentage of fat. They refused, and he accordingly kept his milk at home, made butter and sold it in Three Rivers. The first year he got over \$60 a cow for his butter. He kept this up, selling a little butter and a little cream until he obtained between \$80 and \$90 a cow. Last year he made up his mind to make his cows still more profitable, if possible, and sold all his cream in Three Rivers during the last 15 or 16 months. He tells me that his cows have made from \$120 'to \$150 a cow during the last year or an average of about \$135 a cow, which is a very creditable record, no matter what the breed. Of course, I might say that we have records of other breeds quite as good as that and probably better, but it is one of the best records that one could find anywhere. At the Experimental Farm, which is the only other herd that I know of that has a record—I suppose we will soon have a record from the Macdonald College herd—the butter sold at 24 cents last year. We had seven cows in milk, and taking one year's record they produced by the sale of butter \$77.48 per cow. Of these animals, five were cows and two heifers, so you see the return is a very creditable one. Of the individual records, Zamora is the best, with \$109.02, Fortune d'Oka came next with \$99.81, Poupee next with \$97.01, and Inoquette \$76. One of the heifers gave \$48.05, and the other \$44.54, and a young cow \$67.97. I think that for a young herd it is a very good record.

OBJECTIONS TO THE BREED.

Now, what are the objections, one might ask, to this breed? Why is it not more largely bred, why is it not more widely known, and why do the farmers who have it not make an effort to improve it and get more out of it than they do?

I think, in the first place, that we can attribute it somewhat to lack of fixity in type. We have not got the type quite fixed yet. The breeders are working on it, but it is very hard to fix a type in a breed like this, where a rather mixed lot was started with some ten or twelve years ago.

Then they are too easily kept. That sounds like rather an unusual statement, does it not, but it is true. They are too easily kept; that is, the farmers see them looking fairly well on very little feed, and they say, 'Oh, well, these cows don't want any more food, and we won't begin to give them any more.' So they give the Canadian cow enough to produce a certain amount of milk every day, but if they fed her better

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she would give much better response. Just to give you an example of what she can do. We purchased a cow from a farmer in the Lake St. John district six years ago. Since we have had her she has never produced less than \$100 worth of butter, and in six years she has given over \$600 worth. She has in addition given us five good calves and one rather poor one.

By Mr. Sproule:

Q. By extra feed you got a larger percentage of butter fat?

A. Not a larger percentage, but a larger amount of milk.

By Mr. Wright:

Q. What is the average cost of feed for a dollar's worth of results in butter?

A. Well, I just gave you that. The cost of a pound of butter with the Canadians was not quite 11 cents, 10.84 cents for food, the Guernsey 10.97, the Shorthorns 14.54 cents, and the Ayrshires 11.38 cents.

Q. In speaking of this cost, what do you take?

A. We take the feed, we allow nothing for the care.

Q. But on the pasture you allow something for that?

A. Yes, for everything they eat from straw to pasture, meal and everything; everything they eat is included.

HINDRANCES TO PROGRESS IN DEVELOPMENT OF BREED.

There have been many difficulties surrounding the development of this breed. First, they had to overcome the evil reputation worked up against them during the 30 years of prejudice and official condemnation. The people during this period became of the opinion that the cattle were of no earthly use, that they might as well get rid of them, the sooner the better. They allowed them to go down, to become less productive and neglected them generally. It has taken probably 35 years to overcome that setback.

To-day we find the farmers making a change, they are doing better, but the change comes very slowly, since many of the herds are owned by farmers who are not quite what might be called first-class up-to-date dairy farmers. They are working away, however, doing the best they can, the best they know how. Until a few years ago they were almost exclusively grain and hay farmers. One does not learn to be a dairy farmer in two or three years. Unless one has a good chance, as at an agricultural college or some similar institution, it takes years and years to learn when one has to learn everything for one's self. The people were not used to live stock.

You cannot take a people that are unaccustomed to live stock and get them to love them, to treat them as they would their brother or better; that comes from long association with animals. The Scotchmen, the Englishmen and the old country Frenchmen have it, but our average French Canadian does not seem to have the quality highly developed yet. It is coming, however. I note here and there during the last ten years remarkable progress in this respect, but it comes slowly. In the past this lack has militated very materially against the growth and improvement of the breed.

Again, other breeds have got great records, and these records are well advertised. For instance, we have the Ayrshires, with 13,000, 14,000 and 15,000 pounds of milk, the Holsteins with records anywhere from 10,000 up to 27,450 pounds of milk in a year, whereas this little cow is giving the average farmer only 3,000 or 4,000 pounds. When he hears of such records he begins to sit up and take notice, and wonder what is the use of keeping the French Canadian cow anyway. But as I tell

them, and as I have been telling them this winter in different parts of Quebec that I have visited, if they had that 27,000-pound cow under their conditions, even she would be giving only four or five thousand pounds of milk a year, just as are the best of the French Canadian cows. It is the feed that makes the cow, not the breed alone, although the breed, of course, has something to do with it. The French Canadian cow has not much of a chance in the way of liberal and scientific feeding.

Of course, there is no doubt that the French Canadian cow does give a somewhat less yield of milk than do some of the other breeds, and for that reason the factory system in the province of Quebec has been one of the most effective enemies of the breed, for the reason that they pay for the milk according to weight. To the factory man a hundred pounds of milk is a hundred pounds of milk whether it has 5 per cent fat, 3 per cent fat, or 2½ per cent, no matter what it is, and the French Canadian cow has no chance against the Holstein or Ayrshire under such conditions. Some of the best farmers I know have given up the French Canadians for the reason that they simply could not compete as to quantity of milk with their neighbours who had Ayrshires and Holsteins, although had they been paid for their milk according to fat content they would have done quite as well, if not better, than many of their competitors.

Then, again, the field of expansion is comparatively limited. This breed is not known very widely outside of the province of Quebec. In spite of what I said about Japan and the different provinces, and a great many states taking up the breed, still these total up only a few, the market is very limited and the big breeders or dealers are the ones who get the advantage of the small demand there is, and reap the benefit; the small breeder, the average farmer, gets no benefit at all practically.

Then, again, there is the lack of herd records, and here is a most lamentable state of affairs. Such herd records must be made and advertised before the average farmer will appreciate what there is in the French Canadian cow.

THE STRONG POINTS OF THE BREED.

I have, during the last 10 or 12 years, in following the progress of this breed, sized up their good qualities about as follows:—

They are hardy, and what we call good doers. I have seldom heard of the French Canadian cow being sick. I suppose they do get sick and die or get killed, but they are very seldom sick. I must say this, that while we have not any more sickness amongst our animals than the average farmer, I do not remember ever having to dose a French Canadian cow; whereas sometimes we have to give a Shorthorn a dose of something or other, and the same with the Guernseys or Ayrshires. We find the French Canadians very hardy and every breeder who has them, especially those who have them along with other breeds, makes the same report that they are the hardiest breed they know.

In the second place, they are very easy to keep. They are easy to raise, they are easy feeders, gentle, easily milked and very cheaply raised.

They are good foragers on pasture. The Ayrshire and French Canadian are best foragers we have. I don't know that there is very much difference, but the French Canadian is quite as good, if not better, than the Ayrshire.

They are kindly and tractable. We very seldom find an irritable cow. Of course, we do not find many such in any other breed, but I can say as much about this breed.

They are sure breeders, probably on account of the province they come from, probably on account of the climate, probably on account of the surroundings, probably on account of the way in which they are kept. Anyway, they seldom miss getting in calf. We have never had a cow that failed to calve at the right time, and all breeders report the same thing. They are the surest breeders of any cattle that

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I know of. How prosperity will affect them, I don't know. Probably in a few years the way we are keeping our cows, under such prosperous conditions as maintained at the Experimental Farm, or as may obtain on other farms, we may find some sterility as we do in other breeds, but there has been no evidence of that as yet.

By Mr. Fraser:

Q. How do they compare in that respect with Highlanders?

A. We have no Highlanders at Ottawa. So I cannot say. We have had no experience with that breed at the Experimental Farm. I have seen them on their native heath a few times, but that is all I know of the breed. If the Highlanders are remarkable for fecundity, then they are like the Canadians.

The latter breed are easy to milk, they have good teats, and it is, generally speaking, a pleasure to sit down to milk one of this class. Very seldom is there any trouble with sore teats. There is one fault they have. Sometimes they have uneven udders, but the breeders are getting rid of that, and I expect the shape of the udders will be improved along with the other parts of the animal as breeders continue in their efforts at improvement.

Now, you will think that I have been trying to extol this class of cattle above all others. I am trying to give an appreciation of the breed, and I hope that nothing I have said will be taken as disparaging any other breeds. I think the French Canadians have a place, and their place, in my opinion, is for the butter-making industry. No matter where situated, butter-making districts can advantageously make use of this cow. In districts where hardiness is supposed to be a primary consideration, for instance, in the far northern parts of Saskatchewan and Alberta, and in the Peace River country, I have no doubt the French Canadian cow would thrive just as well as she would in the province of Quebec; they are the hardiest little animals I have ever seen.

Then where there is a cream trade they give a nicely coloured cream, and a large percentage of it. They give a rich milk for the amount of milk produced and the cream is easily separated from the milk. So the Canadian cow proves very satisfactory for a cream trade. Mr. Garceau tells me that in competition with Ayrshire and Holstein cream in Three Rivers he has no difficulty at all in holding his customers or in getting more when he needs them. Probably prejudice has something to do with it. In any case he has never had any trouble in obtaining new customers when he needed them.

Again, for a man who wants a small family cow, I know of nothing that would look more attractive, and be more gentle to handle, or that would be liked better by the children or the people around than a French Canadian cow. She is trim, tidy, easily handled, easily fed, easily milked, and a persistent milker. That is one point I have neglected. There is no breed that is more remarkable as a persistent milker than the Canadian cow. Just to give you an example. One cow having calved in the month of November produced 1,000 pounds of milk in the month of December, 1,000 pounds in the month of June, and approximately the same quantity for several months between. So you see there was persistency in milking. Almost all of the breed possess the same quality, although probably not to such a marked degree as that.

Of course, it is necessary that when a man is going in for the breeding of cattle he should breed the cattle he likes. He should not breed any class of cattle without first looking over the different breeds and picking the one he prefers, judging by the appearance or the qualities as far as he can find them, and then breeding such cattle because he likes them. There is no difficulty at all in getting the breed you most like and such a choice is necessary. Do not select the French Canadian breed of cattle just because you think it will be a good breed, but choose that breed if you

like their appearance, and if you think you will like what they can do. I think that is all I have to say on this question.

By Mr. Wright:

Q. Is there any real difference between what you term Canadian cows and the other breeds in Ontario and Quebec or any other province?

A. When I speak of Canadian cows, I mean registered French Canadian cows.

Q. Registered?

A. Yes, that is what I mean all the way through.

Q. You are just registering them?

A. They must be of a certain type and must have a certain lineage before they will be accepted for registration.

Q. What I mean is in Ontario and Manitoba, for example, are they making a breed just the same as you are making a breed in Quebec out of ordinary cattle?

A. No, these are not ordinary cattle. Probably you were not here during the first part of my address. These cattle were imported in 1620, and for fifty years afterwards, from time to time, and they have been kept practically pure. They never had a herd-book until 1886. Then the herd-book was opened and these cattle registered. That is the way every herd-book has been started. Shorthorns are only Shorthorns because we keep breeding along certain lines; they were once grade cattle. The grade cattle of England are to-day Shorthorns, but not registered. It is the same with the Ayrshires. There are thousands of herds of Ayrshires that are pure bred that are not registered. The same with the Guernseys. More than half of the cattle on Guernsey island are not registered Guernseys.

By the Chairman:

Q. What is the prevailing colour?

A. Black and brown stripe down the back with a fawn ring around the muzzle, horns white with black points, or vice versa. Sometimes we find them inclining to brownness in colour. That is not against the regulations, but it is objectionable in appearance, and we are trying all we can to eliminate it.

By Mr. Owen:

Q. You think they would thrive in any part of the Dominion of Canada?

A. I think they would thrive in any part short of the North Pole, wherever there is grass.

By Mr. Sproule:

Q. In view of the ultimate destiny of cattle for beef, do you think that the French Canadian breed compares with the other breeds such as the Shorthorns or Herefords?

A. I have been talking of them as a purely dairy breed sort. They are no good for beef, although I have eaten some of the flesh, which tasted all right.

By the Chariman:

Q. The beef is just as good as that of the Holstein or Jersey, is it not?

A. Yes. All these animals give good flavoured beef. It is largely prejudice we have against them. Well fed Holstein or Ayrshire make very palatable beef, but it is not very profitable; that is why we don't feed them for beef.

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By Mr. Thornton:

Q. They would be easily made into beef if necessary?

A. Yes, they fatten up nicely. There is one in the group shown in one of the photographs that fattens too easily.

By Mr. Russell:

Q. About what would a cow weigh when she is in beef?

A. They vary in weight greatly. They run, I should say, from 650 to 1,100 pounds. We have one that weighs over 1,100 pounds when she is in good shape.

Q. Something like the Jersey?

A. Yes. Now, there is a cow with a very poor record (showing photo). She has a milk record of only about 5,000 pounds, but she was the champion show cow at the Pan-American. We took her for that reason, although I did not like her, because I did not think she was a good milker. But we were buying here and there, and the man who owned this cow urged us to take her, saying that she was the one that got the first prize. She has not been a good milker, and has never gone over 5,000 pounds. We have cows that run to 9,000 lbs.

By Hon. Mr. Fisher:

Q. What is her test?

A. 3·4 per cent, something like that. Her daughter, strange to say, is one of the heifers that made a good record with her first calf, doing between five and six thousand pounds, which we consider quite good. I think that she had been over-fitted and so spoilt. I have had similar experiences with cattle of other breeds. Over-fitting them spoils them for milk production.

By the Chairman:

Q. Do they give a very high percentage of butter fat all through?

A. They run around four, but very seldom below that, and from four to five is quite common. One cow we had went under four.

By Mr. Sproule:

Q. You would regard that as a very good record, would you not?

A. A very good record, yes. Still, our Shorthorns go about the same, the Ayrshires are a little lower, the Guernseys about the same and probably a little higher. The Guernseys sometimes go as high as six.

By Mr. Clark (Red Deer):

Q. These give weights a little over a thousand?

A. This one weighs a little over a thousand at the present time. That was taken a few days ago.

By Mr. Fraser:

Q. In comparing the French Canadian with the Jersey can you give us the points on which you think the Canadian is superior to the Jersey cow?

A. I am not saying she is superior; I have been trying to show that she is not necessarily inferior. The Canadian cow has been long considered to be inferior to the other breeds. What I am trying to do is to lead you gentlemen to consider them not an inferior class of animal, but to put them on a par with the other breeds. Now in comparison with the Jersey, she is rather smaller on the average, not very differ-

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ent, however. She is a great deal hardier, a sure breeder, a hardier rustler, a better farmer's cow than the Jersey. I don't know what I can say very much more.

Q. As to disposition. Do you know anything of the disposition of a Jersey?

A. Well, I cannot say anything better in favour of the Canadian. We have had some one or two bad bulls, but it does not make any difference what breed it is you find bad bulls everywhere.

Q. How about the Ayrshire?

A. It is just as bad. We have an Ayrshire bull at the farm whose pen I would not care to enter. The Shorthorn is not so bad. The beef breeds are generally quiet and more phlegmatic.

Q. The way you started first you traced back the history to the Jersey or Guernsey Island, did you?

A. I believe Jersey and France were at one time one land, and one could walk across that channel on foot. It is very wide now, 18 or 20 miles wide. There is no doubt however, the cattle are of the same blood. The Jersey people never introduced any other, and they have been breeding for certain peculiar characteristics. The Frenchmen have allowed other stuff to come in, so that the progeny of their cattle at present differ quite materially from the French Canadian cattle, although we can see the connection even yet. But the Jersey, the Kerrys, the Dexter Kerrys and the Guernseys are similar in type and qualities, no doubt coming from the same parent stock away back in the middle ages or early days.

By Hon. Mr. Fisher:

Q. How would the cost of their butter compare with the Jersey butter, so far as you know in Canada?

A. I think about the same as Jersey butter. The Jerseys and Guernseys produce butter at about the same cost according to the figures I have seen. I have never had anything to do with Jerseys myself.

By the Chairman:

Q. Would not the milk have more casein in it if the butter fat was taken from it than that of the Jersey?

A. I don't think it; I am not prepared to say.

By Mr. Fraser:

Q. For cheese factory purposes, for the manufacture of cheese, would the Canadian cow compare favourably with the Ayrshire?

A. Do not take the French Canadian cow where you send the milk to the cheese factories, especially where the payment is according to weight; there is no use going into it. Many farmers were compelled to abandon the Canadian breed on that account in the province of Quebec. You cannot persuade the farmers there to be paid for their milk according to the fat content.

By Hon. Mr. Fisher:

Q. There are more factories in Quebec that pay for fat than any other part of Canada?

A. Yes, but there are a great many that don't pay according to fat.

Q. But the system has been adopted more in Quebec than anywhere else?

A. Yes, especially in butter-making districts, and Quebec is becoming more and more a creamery country. That is one reason why I think the French Canadian cow has a future in that province. It is a great little butter cow. As Quebec becomes more and more interested in butter-making, the French Canadian cow will have a

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better chance. When you go into butter-making you must pay according to fat for the milk, you cannot do anything else. They have tried it otherwise, but it has been a failure.

Q. Quebec produces more butter in proportion to cheese than any other province?

A. Yes, a great many factories in Quebec make butter in the winter and cheese in the summer. They are what is called combination factories. They exist in Ontario also.

By the Chairman:

Q. From your experiments you have found that the cost is less for a pound of milk than for any other breed, excepting Jerseys, have you not?

A. No, per pound of butter.

Q. Per pound of butter, I should say?

A. Yes, a little less than Guernseys. The Guernsey does the next best, and the Ayrshire and the Shorthorn next. Of course, we have only these four breeds. I have just given this table to have some standard of comparison to show them along with other breeds.

By Mr. Smith (Middlesex):

Q. You have found them to please under exceedingly good conditions as well as other dairy breeds?

A. Quite so.

Q. And they have the advantage of being hardier and give better returns when they are under conditions less favourable?

A. Yes, you see, they are smaller and require less food for maintenance so that when a farmer thinks he is giving them a good feed they generally have a little left over, seeing which many farmers think she requires less food. That is one point where she has the advantage over the other breeds in the province of Quebec, and I would say this also: The farmers in Quebec cannot get into their heads that they must feed heavier. Because the French Canadian cow has formed the habit of feeding lightly they think she ought to have only a handful of food and that ought to be enough for her, whereas if the same quantity was given to the Ayrshire or the Holstein they would starve.

A hearty vote of thanks was accorded to Mr. Grisdale for his address.

The committee adjourned.

Having read the foregoing transcript of my evidence, I testify the same to be correct.

J. H. GRISDALE,
Agriculturist.

THE APPLE TRADE OF CANADA.

HOUSE OF COMMONS,

COMMITTEE ROOM No. 34,

WEDNESDAY, April 14, 1909.

The Select Standing Committee on Agriculture and Colonization met here this day at 11 a.m., the Chairman, Mr. M. S. Schell, presiding.

The CHAIRMAN.—We have with us this morning Mr. McNeill, who will address us on the work of the Fruit Division under the heads: (1) The Fruit Marks Act (Inspection and Sale Act, part IX. (2) The Canadian Apple Industry, and (3) Co-operative Fruit Association.

Mr. McNEILL.—Mr. Chairman and Gentlemen of the Committee, you will notice in the Order Paper that I am down to give you what evidence I can with reference to the working of the Fruit Marks Act, and following that, will speak with reference to the Apple Industry generally, with some special reference to the development and advantages of Co-operative Fruit Associations. This, I think, will open up a subject to which you might very well give your earnest attention.

THE FRUIT MARKS ACT IN 1908.

The Fruit Marks Act may, with profit, perhaps, be treated somewhat briefly. We have had fewer prosecutions this year than last year, and a better class of export apples. There have been comparatively few complaints from the large dealers in Great Britain. Do not misunderstand me, our apples are not packed and marked as they should be by any means, nevertheless, they are so much better than formerly and so much better than those of our competitors that the complaints are not numerous for this year. It would appear that the improvement in packing and grading has now reached the first period of its existence. Further improvement will take place under somewhat different conditions and perhaps with greater difficulties. We have made rapid improvement since the passing of the Act, many of the grosser defects have disappeared. Some of the least reputable of the dealers have gone out of the business, and those who are willing and anxious to be honest in their methods can now be so without pecuniary loss. This was pioneer work and has effected a most noticeable change. The rigid enforcement of the Fruit Marks Act will enable us to maintain this position; but for further improvement we must depend upon the slower and more difficult processes of education. Seventy-five per cent of our fruit is poorly grown, poorly packed, or both; but not more than fifteen per cent is packed and marked contrary to the law.

By Mr. Owen:

Q. Do I understand you to say that 75 or 80 per cent of the apples are inspected?

A. No, 75 or 80 per cent at least, are packed and marked as the law directs.

Q. What percentage of the whole are inspected?

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A. As no exact record can be taken of the total crop sold in packages, I can give you only an estimate. Probably not more than 4 or 5 per cent are actually inspected.

By Mr. Armstrong:

Q. If not more than 5 per cent are actually inspected how can you make the statement that 75 per cent are as good as any practical system of inspection can make them?

QUALITY OF APPLES SHIPPED TO THE NORTHWEST.

Q. I might ask at the same time, are the apples going to the northwest about as good in your opinion as they should be, and are the large dealers satisfied? I understand that the very opposite is the case, and I have letters from a great many who are not satisfied with the present working of the Fruit Marks Act.

A. What Mr. Armstrong says is perfectly true, and with proper explanation I think there is no difference of opinion between us with reference to the actual facts. When I say that 75 per cent of the apples are as good as we can expect them to be under any inspection, I mean the 75 per cent of the apples that go into the northwest, and perhaps even a larger proportion of the apples that go to the old country are such that there could be no fault found with them by the inspectors if they were actually examined. I make my estimate of the percentage of fruit that is not packed or marked contrary to law, by taking the actual number of packages that are examined by the inspectors as we get it in their daily reports and noting the proportion between the number wrong and the number right. This proportion is then applied to all the apples packed. Of course, this method gives only an estimate, as the inspectors examine so small a percentage of the whole pack. Nevertheless, I think it is a fair estimate.

I would not have you understand that there are no complaints as to our apples from dealers and others, and I am here to say that I believe too many of these complaints are well founded. Nevertheless, I would warn you that we are likely to hear all about the apples that are bad, but very little or nothing about the apples that are good, on the same principle that nine good citizens may attend church regularly every Sunday and otherwise lead exemplary lives, but let the tenth man attend the police court on compulsion but once, and you will find him honoured (?) with double headlines next morning. It is the same with apples. It is the ten per cent that we hear about. But we should not have even ten per cent wrong. I agree that there is room for much improvement in the apples sent to the northwest.

Q. It is not alone the merchants and consumers who are complaining. The co-operative associations which you so strongly advocate and which are doing such splendid work in growing and distributing fruit, speak very forcibly in favour of a more stringent enforcement of the present Inspection Act. They say that the small shippers are taking advantage of them at the present time.

A. There have been some complaints from one or two of the co-operative associations, to which I shall refer later on. These associations are grading very high, higher indeed than some of their members would grade if they were packing their own apples. It has happened that buyers have operated in orchards in the neighborhood of these associations, and it is alleged that they have packed a lower grade, thus taking a larger quantity of fruit than would be taken under the association grading. This has caused some friction but no serious trouble. Much of the lower grading practised by outside buyers was still not below the legal standard. It is not always possible to show to the satisfaction of co-operative association members, that the higher price which they get through the association more than offsets the

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smaller quantity of fruit taken from any particular orchard. The responsibility for the proper packing of apples is thrown upon the packer, and the staff of inspectors which we now have is for the purpose of detecting breaches of the Act, not for the purpose of overseeing the packing of any particular lot. Whether we have enough or more than enough for this purpose is a question. Mr. Armstrong says what is perfectly true, that some of these co-operative associations are urging that we have not enough inspectors to detect all the bad packing that is done.

STAFF OF THE FRUIT DIVISION.

By Mr. Blain:

Q. In addition to your regular staff of inspectors you have some special officers performing inspection work. Will you explain their duties?

A. We have eight permanent inspectors and 13 temporary inspectors. The former are men who are so qualified that we can find employment for them during the whole year. The temporary inspectors are employed during the shipping season only. They have all proved good men.

Q. Are they supposed to go to any part of the country and drop in upon an apple packer and examine his fruit?

A. Yes, at any place.

Q. And do they prosecute that packer if he is not living up to the law?

A. They recommend a prosecution if they think one should be made.

Q. Then they are what is termed in the province of Ontario 'spotters'?

A. They do the work of detectives. They drop in at packing houses or orchards without notice. This is true particularly in those districts making a specialty of orcharding, and several prosecutions have arisen from examinations of the work of apple packers engaged in packing apples in the orchard and who were not aware that the inspectors were in the neighbourhood.

PROSECUTIONS UNDER THE FRUIT MARKS ACT.

Q. May I ask, were many prosecutions instituted by these special inspectors last year?

A. Several. We had altogether last year 80 prosecutions under the Fruit Marks Act. Of this number 47 were in Ontario, 31 in Nova Scotia and 2 in Quebec. The province of Quebec does not export a great deal of fruit, consequently the number of prosecutions is not large. Many of these prosecutions, of course, originate in different parts of the country. For instance, inspections take place in the northwest, but they are credited to Ontario because the shippers live in that province.

By Mr. Burrell:

Q. How many of these prosecutions took place in the west, either in the prairie country or in British Columbia?

A. We have made no classification of the districts in which the prosecutions have originated, but not less than 15 or 20 have originated in the northwest.

Q. And that number includes the whole of the prairie section?

A. Yes, the whole of the prairie section.

Q. These are the two parts of the country, British Columbia and the prairie provinces, where an enormous importation of fruit takes place. I suppose they import ten times the amount that the rest of the country does. That seems to be an insufficient number of prosecutions considering what the facts are. However, perhaps you can take that matter up later on in your address?

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A. Yes, I will do so later on. We do not find that the imported fruit is offered for sale improperly graded or marked. Indeed the evidence we have shows it to be graded much better than the average of home grown fruit.

GRADING AND PACKING DONE BY CO-OPERATIVE ASSOCIATIONS.

By Mr. Sealey:

Q. What is the character of the grading, marking and packing done by the co-operative associations. The impression might be left from the discussion today, that the greatest defects exist in connection with the associations. From my own knowledge I think it is the other way?

A. You are quite correct. The co-operative associations do the best work. I have no hesitation in saying that the packing done by the co-operative associations is infinitely—I want to use a strong expression—better than the packing which is done by private individuals; and as a matter of policy, the sooner co-operative packing is adopted throughout the whole of the apple growing sections the better it will be.

EXPORT OF APPLES FROM PROVINCE OF QUEBEC.

By Mr. Monk:

Q. State approximately what percentage of the total quantity of apples exported from Canada comes from the province of Quebec?

A. No figures are available to show this. A comparatively small quantity of apples exported from Canada comes from Quebec. That province at the present time does not grow large quantities of apples that are exportable in barrels. If the Fameuse, McIntosh Red and a few other varieties were packed in boxes and carried in cold storage, a large quantity could be exported at a handsome profit. At present the province of Quebec does not export more than one-half of one per cent of the Canadian output.

By Mr. Broder:

Q. A great many of the apples exported from Ontario go from Quebec ports?

A. Yes, from Montreal.

LOCATION AND WORK OF FRUIT INSPECTORS.

By Mr. Sproule:

Q. You named two classes of inspectors, permanent inspectors and temporary inspectors. Are the permanent inspectors located in any particular place?

A. At the beginning of each shipping season we allot them a certain territory in apple districts. In Ontario one inspector is allotted to the Lake Huron district; another is detailed for the southern part of Ontario; a third takes the work in Toronto and Niagara district; a fourth, the Georgian Bay district, and a fifth the important territory north of Lake Ontario. Four inspectors are stationed at Montreal. There were last season 21 inspectors, 8 permanent and 13 temporary, and they examined during the year 425,980 packages.

Q. Do you mean that these inspectors actually opened that number of packages?

A. Yes. These were found in 337 lots containing 2,191,049 barrels. This is very fair work. I doubt very much whether you will find in any country, officials who work harder than our fruit inspectors. If any of you wish to test this, you can do so at the port of Montreal at any time, day or night, during the export season.

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I mention this in justice to the inspectors whose high character for intelligent industry and probity has gained for them the respect of all who have come in contact with them in the discharge of their duties.

By Mr. Owen:

Q. Please give me the names of the permanent inspectors?

A. Messrs. P. J. Carey, E. H. Wartman, F. L. Dery, G. H. Vroom, M. R. Baker, J. McCabe, Maxwell Smith and W. W. Brown. In the annual report of the Dairy Commissioner you will find a full list of all the men who were prosecuted during the year.

By Mr. Armstrong:

Q. What are you doing outside of the inspection work of the inspectors, to educate the people to conform to the Fruit Marks Act?

A. We are perhaps not doing all that might be expected if it were not thoroughly understood that the matter of education in all lines is left very largely to the provinces. To a certain extent we are employing the permanent inspection staff when there is no fruit to inspect, at fruit meetings held in different parts of the country. At the present moment Mr. Carey and Colonel Brown are engaged in holding a series of meetings in Oxford county, a very important apple district. There are other meetings planned.

THE FRUIT MARKS ACT A SUCCESS.

Gentlemen, I have no hesitation in saying that the Act is working satisfactorily. One feature that may be of interest to you is that we receive a great many letters from the United States making inquiries as to the workings of the Fruit Marks Act. No less than five States are endeavouring to pass an Act similar to the Fruit Marks Act, and the American Pomological Society, the authority on pomological matters in America, have taken the matter into consideration. I was asked last year to give a paper before this society at Jamestown, Va. They passed a unanimous resolution commending the principle of the Act to the Federal government, and this resolution was sent on to Washington. I am informed that a Bill on the same lines as the Fruit Marks Act is to be brought before Congress. I mention this to show you that the Act is regarded as a step in advance of anything we have had before, and that it is working fairly satisfactorily; but it requires constant attention and constant watching in order that we may get the full benefit of it.

CANADIAN APPLES IN BRITISH MARKETS.

By Mr. Blain:

Q. How do our apples compare, in respect to packing, with other apples that are competing with us in the British markets?

A. The Canadian apples in barrels stand at the head; western apples in boxes, of course, are ahead of the barrels again, so that we in Canada may be said to stand at the head in barrel apples. but barrel fruit stands below box fruit. By way of comparison we may take the apples of New York, Maine and other New England States, which send apples of similar varieties to those sent from Canada to compete with ours in the English markets. The Canadian apples are quoted usually at two shillings to three shillings per barrel higher on the general market than the apples from these States.

Q. But the American barrels are slightly smaller?

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A. Yes, but this is only a partial explanation, the higher price is for the most part on account of the better quality and the greater confidence which the merchants and consumers of Great Britain have in our methods of packing.

Q. Is the demand increasing for apples in boxes in preference to barrels?

A. The demand is increasing for boxes, and the trade will tend in the future more towards boxes; but I do not hope ever to see the day when barrels will not be in demand in Great Britain, more especially for a second quality of fruit

By Mr. Sproule:

Q. About how much do the boxes hold?

A. About one-third of a barrel or one bushel.

BRITISH COLUMBIA AT NATIONAL FRUIT SHOW, SPOKANE.

By Mr. Owen:

Q. What do you mean by the Western States when you speak of the trade there?

A. The States on the Pacific slope. British Columbia is in the same section in the matter of fruit. They grow the same varieties and the same quality of fruit, and they pack it very much in the same way. Just here, while this particular phase of the question is up I will state, with your permission, some results in the fruit competition at the National fruit show in Spokane, where there were exhibits from all parts of the United States and from British Columbia, but none from Eastern Canada. That exhibition was held in the heart of the Pacific apple district where they claim they can grow the finest apples in the world, and where are packed the apples that command the highest prices in the Eastern States and in Great Britain. The largest individual winner. F. R. F. DeHart, of Kelowna, B.C., formerly of Oshawa, Ont., won \$4,400 in the aggregate. Wenatchee, Oregon, took second place in individual display. Mr. DeHart won first prize for best 10 boxes of Jonathans, first for best 10 boxes Northern Spys, first for best box packing, first for best barrel packing. 7 firsts in the plate exhibits out of 8 entries. He also won the silver cup awarded to the winner of the most first prizes.

Kelowna district (Mr. DeHart and J. Gibb in charge), captured the second prize on district display, Wenatchee valley winning first by three points (315 to 312).

Mr. DeHart had in all 43 boxes on exhibit. In box packing all three prizes went to British Columbia, Mr. DeHart first, Mrs. J. A. Smith, of Victoria, second, and Herbert W. Collins, of Grand Forks, third.

The best individual plate exhibit grown by a woman went to Mrs. E. Low, of Keremeos, B. C. Kalso won first and second prize for her famous Gravensteins Creston and Nelson each won 7 or 8 prizes in the plate exhibits.

The judges were representative of Iowa, Oregon, Washington, Montana and Idaho Agricultural College, with Maxwell Smith, D.F.I., of Vancouver, B.C., and Professor John Craig, of New York.

ROYAL HORTICULTURAL SHOW, LONDON, ENGLAND.

British Columbia, Ontario and Nova Scotia each received a medal, awarded for merit, at the exhibition of colonial fruit under the auspices of the Royal Horticultural Society of England.

I mention these facts to show that there is no doubt that Canada can produce the best of fruit, is going to produce it in larger quantities, and that she has, as we know, men who are fitted to take the first place in preparing that fruit for market. It is the business of the Provincial Legislature and the Parliament of Canada to

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see that the best facilities and the greatest encouragement possible is given this industry.

THE INSPECTION OF IMPORTED FRUIT.

By Mr. Burrell:

Q. Are you leaving the Fruit Marks Act now, Mr. McNeill?

A. Yes.

Q. You have chiefly touched on one phase of the question, that is the inspection of home grown and home packed fruit, and fruit for export?

A. A prominent fruit grower in British Columbia writes me in regard to the inspection of imported fruit as follows:

‘What the fruit industry is in present need of is protection from American fruit by properly drawn amendments to the Fruit Marks Act and the requisite number of inspectors in charge of a general inspector with instructions in his hands to see that the law is enforced.’

I have another letter from the manager of the Coldstream Ranch. This ranch was founded by Lord Aberdeen some years ago, and from his present connection with it he is now, perhaps, more heavily interested in British Columbia fruit than any other individual in the province.

‘Let me point out to you that private individuals are not in a position to lay information and prosecute for violations of the Act that occur in the northwest. The breaking of the Act occurs in the northwest, and it is absurd to think that British Columbia people can take the matter up there. It is for the government who frame Acts to see that they are carried out, not the private individual. Unless the government puts on more inspectors and men that will carry the Act into force, the Act will remain a farce as it has been in regard to the American fruit. We feel very strongly in British Columbia about the subject, and shall leave no stone unturned to see that the fruit that is in competition with ours is subject to the same inspection.’

Now this opens up a very large phase of the subject. As I understand it, the object of the Department of Agriculture in putting this law on the statute book, was for the purpose of improving the grade and the packing of fruit for export so as to give our fruit a better name and a better standing in the old country market. If I gather correctly the department takes the stand that it should not undertake the business of training up people to properly pack their own fruit. That, of course, is a matter for discussion. I am not entering into the advisability or non-advisability of doing that. I admit that upon the fruit packers devolves the responsibility, to some extent, of living up to the provisions of the Act, but if it is a right principle to inspect the products of the British Columbia fruit growers to see that they enter the market properly, it is equally right that the products of their rivals in the United States upon entering this country should be inspected; in other words that American fruit growers should be compelled to live up to the Act in the same way as we are compelled to do. You have stated that the United States is so much in love with the Fruit Marks Act that it contemplates enacting a similar law. We have had a good deal of experience in the matter of competition from California, Oregon and Washington, and the province of British Columbia has passed legislation for the purpose of strictly excluding fruit which is infested in any way, that being a subject which is under the control of the Provincial Legislature. We find that while California, Oregon and Washington will pass the most stringent Acts for the purpose of preventing the sale or distribution of infested fruit in their own markets, they are particularly lax in regard to the exportation of such fruit to this country. The consequence is that a very inferior class of fruit which they keep out

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of their own markets is being dumped on to the markets of this country. We take this ground very strongly, and I hope you will be able to impress it upon Mr. Fisher as strongly as we have been able to do in the House and outside, that it is absolutely essential that our American competitor should not be allowed to enter our markets unless he complies with the same requirements that we have to live up to. As to the question of instituting prosecutions, I think that is the duty of the government. I do not think that responsibility should be allowed to fall upon a private individual; in my experience the private individual never does do that. We have again and again proved to the satisfaction, I think, of the minister, that large shipments of improper fruit have been coming into this country and the inspectors find themselves absolutely inadequate to cope with them. The fruit growers in British Columbia are, therefore, in this position: We are cut out of the prices that we should receive in our own markets, by secondary stuff from the United States which is marked as first class fruit by the local dealers. This inferior fruit coming from the United States is marked by them as No. 1. The dealer is the man you must get after. You cannot control the American grower. I think we are absolutely justified in asking to have the protection of the law as far as our foreign competitors are concerned. The consumer on the prairie, also, has a right to demand that the fruit shall be marked in exact accordance with its character as put up in the box. He has a right to get what he pays for. Now, if I understand you correctly, you said that your inspectors had inspected about 225,000 packages, and that would represent 7,000 actual lots?

A. Yes.

Q. That would mean that your inspectors are in the habit of opening on the average about 40 packages in each block. That, I think, is fair. For instance, if you come to a carload of apples which contains from 550 to 600 boxes, I should judge from my own experience that the opening of 40 of these would be a fair guarantee that the whole consignment was as represented. Going into one carload and opening 40 boxes takes time, and when we remember that on the Winnipeg market alone there were 150 carloads from the other side, shipped last year, you can understand with only one inspector for Winnipeg and two inspectors for the whole of Manitoba, Saskatchewan and Alberta, it would be absolutely impossible for them to cope with that work even if they only dealt with a part of these importations. We have proved again and again that these importations are coming in in a way that is hopelessly contrary to the Fruit Marks Act to which we are compelled to live up. I feel in the very strongest way about this, whatever may be your view and the view of the minister about teaching our own packers. You may be right. I am not discussing that; but it is an absolute necessity that the government should see that our foreign rivals should be compelled to observe this Act just as we are compelled to do ourselves.

Mr. BRODER.—It is the consumer that is in fault.

Mr. BURRELL.—The consumer will not take the trouble to lay an information for a prosecution.

Mr. BRODER.—Is he not able to discriminate between a poor article and a good one?

Mr. BURRELL.—Very often he is not. But the American is a splendid packer. The fruit from the other side comes in splendidly packed and until you examine that fruit you would not notice that it is far below the requirements of the Fruit Marks Act as regard insect pests and the quality of the fruit. Examine the box at the top and at the bottom. Apparently, as far as you can see, it is perfect fruit; but if you look carefully into the box you would find that such is not the case. The American packers ship their first class fruit for which they get \$2 and \$1.50 from Hood River, Yakima Valley and Wenatchee Valley, not to us but to other parts of

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the United States. It is the second class stuff which they ship to us for 65 and 70 cents. The wholesale dealers mark that inferior fruit as No. 1 and it is sold in competition with our No. 1 when it should be marked as No. 2.

Mr. McNEILL.—I quite agree with many of the principles advocated by Mr. Burrell and can heartily concur in what he recommends for the enforcement of the Fruit Marks Act. As a matter of fact, he is labouring under a misapprehension regarding the scope of the Fruit Marks Act and I feel certain he has not fully informed himself with reference to the methods of enforcing the Act, nor the results of the work of the Dominion Fruit Inspectors as shown in their reports. He is influenced, possibly, by a few cases that are not typical and by correspondents who most naturally will look at circumstances from one side only. Mr. Burrell and the correspondents he quotes appear to be under the impression that the enforcement of the Act is left to private individuals. Such is not the case. But the Honourable the Minister of Agriculture in framing the Act, and parliament in passing it, very wisely made it possible for anyone, cognizant of a violation, to lay an information against the offender. But the principle is conceded that the government should use more than ordinary means to enforce the Act. Hence the organization of a staff of twenty inspectors working most effectually throughout the Dominion.

IMPORTED FRUIT SUBJECT TO PROVISIONS OF FRUIT MARKS ACT.

In the correspondence submitted by Mr. Burrell and apparently in his own mind, there is the assumption that American fruit is not subject to the same system of grading and grade marks as that prescribed for home grown fruit. I agree with him, that if this were the case it would constitute a serious grievance. But such is not the case. The imported fruit package has to have precisely the same marks when it reaches the consumer as the home grown fruit, with this difference, that the name of the importer is substituted for the packer. This change is necessary as we cannot reach the foreign packer; but we can reach most effectively the Canadian importer. This change instead of working in favour of the American grower, works directly against him, because it concentrates the inspection work at a few points. Of the 19,852 packages of apples that came into British Columbia the present season up to December 31, 1908, 16,572 came into Vancouver and Victoria, and if we take out the 2,208 that came in at Nelson, it leaves less than a thousand boxes for all the rest of British Columbia. Where then should an inspector be placed to inspect most effectively American fruit? Most assuredly just where we have placed him at Vancouver where he can reach without difficulty all the imported fruit that comes into British Columbia except something less than four thousand boxes.

Another complaint is that the country is flooded with second quality American fruit. Some second quality does come in, but it is only a small per cent of the whole, and when so marked by the first importer no exception can be taken to it.

To the discredit of the fruit growers of Canada I regret to say that all the evidence we have from consumers, merchants and our inspectors shows that the imported American fruit on the average is better packed, more uniform in size and appearance and freer from defects than the home grown fruit. The very stringent laws in force in British Columbia against fruit pests will prevent low grade fruit in any quantity entering that province. Out of every hundred packages of American fruit coming into the northwest provinces, ninety-five are correctly marked as required by the Fruit Marks Act, and of those marked, less than one per cent were found wrongly marked. I regret that we cannot equal this record in Canadian fruit. This disposes, I think, of the assertion that large quantities of low grade fruit are coming into Canada.

To sum up my answer to Mr. Burrell's questions regarding American fruit, I will say that:

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(1st.) Imported fruit is subject to the same grading and marks as home grown fruit;

(2nd.) That all the evidence in my possession including that of consumers, merchants and inspectors in the northwest, shows that the packages are, with a few exceptions, properly graded and marked;

(3rd.) That imported fruit on the average is better in quality and better packed than home grown fruit.

That more packages could be examined and more violations could be discovered with a larger staff goes without saying. The question of appointing more inspectors is, of course, a matter for the consideration of the minister when he has all the facts before him.

By Mr. Burrell:

Q. Did you read the discussion in the House?

A. Yes.

By Mr. Owen:

Q. How long has Mr. Brown been a member of the permanent staff?

A. He was working all last year and he is on this year. He received his first appointment last year. He took the place of Mr. Philp who died suddenly at Winnipeg.

By Mr. Chisholm (Huron):

Q. Why should not the apples from the United States be subject to the same inspection as our apples?

A. They should be and are absolutely subject to the same regulations—do not misunderstand me.

By Mr. Burrell:

Q. I do not say that they are not subject to the same regulation; but is that provision enforced?

A. Quite as well as in the case of home grown fruit.

Q. You cannot say that the regulations are enforced?

A. The laws against murder will not prevent an occasional murder, and I quite admit there are occasional violations, but the violations are not more numerous than in the case of home grown fruit. As a matter of fact, less than one per cent has been discovered seriously wrong. It will be very difficult to get a much closer conformity to the law. The American box is preferred, too, because it usually contains a greater weight of fruit.

THE WEIGHT OF BOXED APPLES.

By Mr. Burrell:

Q. How do the Americans get more in their boxes? We use the large standard box 20 by 10 by 11; the California is the only box that is larger?

A. These are only a few cubic inches smaller.

Q. 27 cubic inches less?

A. That would be about the space occupied by three fair-sized apples; but the Americans are the better packers. They put more pounds' weight of fruit in the same sized box.

Q. I think, Mr. McNeill, it is simply a matter of a man wanting to get a certain amount in the box. We employ a lot of packers from Washington in British

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Columbia, and I have here a letter from a firm who are employing a packer from Oregon?

A. They are excellent packers. The Department of Agriculture employed one from the Okanagan Valley. To illustrate one feature of good and bad packing, he emptied a box well packed by himself and repacked the same box with the same apples, looking equally full but leaving out about one-fourth of the fruit. This box, however, would not stand up to ship well. It would soon go slack on the journey and so be rejected by the importer. The most skilful packer is the one who can get the most fruit in the box as such packages will reach their destination tight. One of the gravest faults of the beginner is that he does not get the proper quantity of apples into the boxes. Only the expert packer can do that.

By Mr. Broder:

Q. He cannot fill the box with less apples than the box will hold?

A. He can arrange the apples in the box to look full and weigh 55 pounds or with a different arrangement of the part of the same apples he makes the box look equally full and yet only weigh 50 pounds or even less. It is want of skill and not fraudulent intent that makes the British Columbia box sometimes lighter than the American.

By Mr. Sproule:

Q. There is also the trouble that the smaller the apples are the greater the number that will go into the box?

A. Yes, that is so. It is also true that a 2½ tier box is lighter than a 5 tier box though both are equally well packed.

By Mr. Burrell:

Q. I would just like to speak in regard to this statement that has been made by some of the dealers. You have to remember that a great many of those dealers, as you know, are practically American firms, and it is to their interest to a large extent to develop that trade. When they have a big crop and their own market is somewhat demoralized they want to ship their fruit into Canada in order to keep up their own prices; but I do not think there is any such variation in the weight as you have mentioned. We have tested a carload of Washington apples and they varied from 43 to 51 pounds, and if you take a carload of our own apples you will find about the same variation. I do not believe that in the average pack there is any difference?

A. Is it not a fact that British Columbia apples are carried by the railways on a basis of 40 to 45 pounds, gross weight, while Washington stocks are carried on a basis of 50 to 52 pounds gross weight?

CANADIAN FRUIT GROWERS AND THE NORTHWEST TRADE.

Under the circumstances it will be only fair for me to say to the committee, that in addition to a letter similar in statements to those read by Mr. Burrell, we have received many of a different tenor of which the following extract from a letter written by Cloy & Simmons, Calgary, is a sample: 'The principal thing that British Columbia growers have to do is to get down to a system of packing and shipping stocks which will compete with Washington and Idaho packs. At present there is no comparison, as American shippers' stocks are so far ahead regarding packs that they practically close out British Columbia shippers. It is not a question of freight or duty—it is a question of quality and pack, and outside of the British

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Columbia firms that we have mentioned above, we have seen very few packs that are worth mentioning.

We are in favour of handling Canadian goods; but it is simply a matter of business; they must first educate themselves to pack correctly and mark their packages exactly what same contain. The provinces of Alberta and Saskatchewan are not fruit producing provinces, but they are very particular as to the class of goods which they handle, and it is quality and value that counts with the wholesaler, the retailer, and the consumer, and these three outlets should be protected as well as the grower.

So far as inferior stocks are concerned, such as seconds or cookers, we speak with authority when we claim that there is nothing but high class goods come from American points to Alberta, and as we have heard it reported that Canadian points were the dumping ground of second grade American fruits, we wish to state that this is an absolute falsehood so far as Alberta points are concerned. We find that British Columbia growers endeavour to ship their first class stocks to Australia, New Zealand and Great Britain, and try to force an inferior class of goods on our market and they have no particular kick coming on American shippers as our trade wants nothing but first class goods, and these the American market supply us with. We are willing to do all we can to sell Canadian goods and encourage Canadian growers, but we would point out the fact that they must first put their goods on the market in such shape that they can compete with aggressive competition.'

Now, to close this part of the subject, may I not suggest that we should hear from the consumer in the great northwest as well as from the growers in Ontario and British Columbia?

THE MARKING OF IMPORTED FRUIT.

By Mr. McIntyre (Strathcona):

Q. Whose duty is it to place the marks on the packages of fruit?

A. It is the duty of the packer if the goods are packed in Canada, and the importer if the goods are foreign.

Q. Where are those marks placed on the package?

A. The Act says that the marks shall be placed by the person who owns the apples at the time of packing before it leaves the premises, the meaning of premises being extended to include the shipping station.

Q. Then it would be an infringement of the Act in the case of a carload of apples shipped from the Okanagan valley to have the marks placed on the packages of fruit as they were taken out of the car and handed over to the consumer so to speak?

A. That would be an infringement of the Act.

Q. I may inform you that that is repeatedly done in the province of Alberta?

Mr. BURRELL.—Where does the fruit come from?

Mr. MCINTYRE (Strathcona).—I could not say. I am only giving an instance.

Mr. MCNEILL.—It comes from some part of British Columbia.

Mr. MCINTYRE (Strathcona).—Some person is sent with a carload of fruit that is shipped to the northwest. I do not know where it comes from.

Mr. BURRELL.—Do you mean it comes from British Columbia?

Mr. MCINTYRE (Strathcona).—It may come from British Columbia.

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Mr. BURRELL.—I don't think so, as all our boxes are bought stamped at the factory.

Mr. MCINTYRE (Strathcona).—You may know more about this subject than I do. I am only making this statement. The person in charge of the fruit when the car is opened at the point of destination has the fruit loaded on the drays, and as he does so places the marks on the boxes.

Mr. BURRELL.—I am pretty well convinced that the practice you speak of is very largely followed in the case of foreign fruit. The point you raise is a very important one, and I think we are both in agreement. We British Columbia fruit growers have to undertake the responsibility of marking fruit ourselves. Every grower has to have his name on each box of fruit which he sends out, in half-inch letters, also the variety and the grade. This fruit we are complaining of comes in from the other side innocent of any such marking. I have seen it come into one town in a mining district without any marking. No one could say where it was grown or who the packer was. The local dealer puts in the mark in the case of this fruit, and a person, perhaps 100 miles away, has the burden imposed upon him of exposing that man. Under the circumstances private individuals will never undertake this duty, and what we want is a more stringent law, and one that will not leave the consumer or the private individual to see that its provisions are carried out.

Now, with reference to the distribution of this inferior fruit in Alberta: If you had read the debate in the House, March 26, you would have seen that we produced the strongest evidence we could possibly get from official sources to show that there was absolutely no first-class fruit shipped to the northwest from the other side, but that it was second-class stuff shipped in under a first-class brand. We have any amount of evidence of that character. Not only that, but Mr. Ross in his declaration swore that the Americans were shipping second-class fruit for 65 cents f.o.b. When that fruit reaches its destination the wholesale dealers, as Dr. McIntyre says, take it out of the car and mark it as No. 1 brand. The government should see that the Act is lived up to as far as our American competitors are concerned.

Mr. MCNEILL.—American boxes like British Columbia boxes are stamped with a die at the factory with all permanent marks. The packer has rubber stamps with which he marks the name of the variety, the size of the apple (in tiers) and the number in the box. This, together with the permanent marks on the box, gives all the facts required by the Fruit Marks Act and more. But the information is not put in the form required. Usually all the importing merchant has to do is to stamp his own name and No. 1 or No. 2, as the case requires. The merchant being as much a responsible party for imported fruit as the packer is for Canadian fruit, and as he is much easier to reach, it is actually easier to prevent fraud in imported fruit than in home fruit where in practice we do not hold the merchant handling it responsible as we do for imported fruit. The person seen by Dr. McIntyre marking boxes in Calgary was in all probability the importer of foreign fruit. It would go to show that he knew the law in that case and was following it.

By Mr. Armstrong:

Q. I would like to read a few lines from a letter written by Mr. Johnson, of Forest. From the Grimsby district alone 30 to 40 carloads of fruit go out in a day. Yet we have only one inspector for Toronto and the district to the Niagara river attempting to inspect all the fruit going out. This is absurd. Mr. Johnson says:

‘I have no hesitation in saying that the inspection that is now given is of no use to the fruit industry, and if the Fruit Marks Act is not better enforced we would be far better without it.’

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That is from the president of the Forest Fruit Growers' Co-operative Association. I might go on and give you statistics, but I know that you realize the importance of this question ?

A. Mr. Johnson is strongly in favour of the Fruit Marks Act, but forgets, for the moment, that the fruit which he sees fraudulently packed by operators in his district, is liable to be examined in transit or at the point of consumption. As a matter of fact, at least two dealers working in his district were each fined twice this season, but, of course, Mr. Johnson did not know at the time of writing that this was being done.

Q. He did not make the statement that the Fruit Marks Act was no good, but that as at present carried on it is of no use.

By Mr. Gordon (Kent):

Q. The object of having inspectors is for the purpose of enforcing the law?

A. Yes.

Q. Then a whole army would not be sufficient to prevent every violation.

EDUCATION THE SOURCE OF IMPROVEMENT.

A. Twenty more inspectors would not make the improvement in the industry made by the present staff. For the future, more dependance must be placed on education. Coercion can do something, but the real solution of the difficulty lies in the education of the fruit growers and the packers. The great majority of them are now doing as well as the law requires; but we want them to do much better than the law requires. Here coercion will not help us. It is a case rather for persuasion.

THE NORTHWEST CONSUMERS POINT OF VIEW.

Mr. McINTYRE (Strathcona).—Before you proceed with another branch of the subject, let me say that I am perfectly in sympathy with what Mr. Burrell has said regarding the more strict enforcement of the law. My only method of discussing this matter is purely and simply from the consumers' standpoint in the province of Alberta. I do not know whether the inferior fruit comes from the Okanagan valley, the province of Ontario or the United States, but I do know that we have a great deal of fruit sent into that country that is not of the highest quality.

Mr. McNEILL.—I agree with you.

Mr. McINTYRE (Strathcona).—That applies to the smaller fruits particularly. We have it put up in a shape that does not reflect very great credit on the growers or the packers. I would ask, Mr. McNeill, that your inspectors try in some way to have the fruit examined at central points as you suggest, or in certain districts when this fruit leaves the grower or as soon as possible afterwards, so that its condition at that particular point shall be sound and that the people in the west shall get value for their money. As you stated before, we are willing to pay for our fruit in that country, but we want it good.

Mr. SCHAFFNER.—I would like to emphasize, after a very great deal of experience in fruit, what Dr. McIntyre has said. Most of the fruit that comes into our section of the country comes from the United States. It is early fruit, and with regard to it I have practically no complaint to make. The complaint that I have to make is with regard to the fruit from Ontario that comes in barrels. I asked the question a few moments ago how we are going to get at those packers? I quite agree that it will be absolutely impossible to have sufficient inspectors at the point

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of shipment to inspect all this fruit in order that it may reach the consumer in proper condition. There is, however, something decidedly wrong in the way in which the shippers of Ontario are packing their fruit and sending it to Manitoba. What I want to know is how we are to get after these men. I come originally from the Annapolis valley, where they can grow the best of fruit. I do not know how the fruit growers have progressed morally in recent years, but I do know that when I was home on the farm my father thought it was exceedingly dishonourable to put up poor fruit; but I am afraid there has been a falling from grace in this fruit business. Fruit is now going into Manitoba in a disreputable condition, which, in my opinion, is bad alike for the shipper and the grower.

By Mr. Sealey:

Q. We can scarcely expect to have an inspector for every barrel or for every orchard, but if a condition such as Mr. McIntyre has mentioned exists, and instances occur as frequently as they are said to, it would not be very much trouble for the persons who are aggrieved to drop a postal card to the inspector informing him that at a certain point such a condition of affairs exist.

Mr. MCINTYRE (Strathcona).—You do not understand the distances in our country. It may be several hundred miles away.

Mr. BURRELL.—You understand there are two inspectors for the whole of the prairie country, Manitoba, Saskatchewan and Alberta, and when you realize the extent of that territory you will agree, I think, that it is absolutely impossible for those men to cover the work properly. We ask for only four inspectors.

Mr. BRODER.—Supposing these apples are inspected at the point of shipment, are you going to have them re-inspected up there in the west? Is a man who has had them inspected in his orchard to be held responsible for the condition of the apple when you eat it in the northwest? I do not think it should be so; he ought to be released somewhere from his responsibility.

A. As the members of the committee can readily see, the subject is a very complicated one. There is a large quantity of fruit which reaches the northwest in good condition, but as Dr. Schaffner and Dr. McIntyre have suggested the fruit growers and shippers have much yet to learn in growing, packing and distributing the fruit in proper condition.

THE CAUSES OF THE POOR FRUIT IN THE NORTHWEST.

By Mr. Sproule:

Q. Is that due to careless packing and poor selection of apples entirely, or would it not be partly due to damage sustained in transportation?

A. No single cause can be assigned. Careless packing and poor grading account for many of the evils complained of. The railways are to blame for the bad condition of many barrels. Tens of thousands of dollars of easily preventable loss can be laid at their door. But perhaps the greatest of all evils is the system of selling and harvesting now in vogue. If the present foolish system could be replaced by co-operative methods nearly all the greater obstacles would disappear. Since you have decided to call me to-morrow, I will reserve the subject of co-operative associations till then. I may say here, however, that notwithstanding the closest examination we found defective marking and grading in only one or two instances and those in societies not yet properly organized. In the older associations such as Forest, Chatham, Oshawa and Simcoe, not even a single barrel has been found

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wrong. Not only is the packing and grading well done, but their organization has enabled them to ship promptly when they could not have secured cars as private shippers.

Just here let me say that the railways are responsible for much of the bad fruit that goes to the northwest. The growers have their failings, and they are many. Many of the itinerant apple buyers are little better than parasites on the industry, and even the reputable apple operator makes sad mistakes, but none of them are as great or as persistent sinners as the railway companies. They have neither the terminal facilities, rolling stock nor train arrangements to suit the trade, and as a consequence thousands of dollars are lost to the country through a policy of petty economy that must result in a loss ultimately to the railways themselves. I have investigated cases this year where the fruit was delivered at the station and where it remained without protection from sun or rain for two weeks waiting for cars. To make matters worse the barrels had been packed for some days before that. The railway journey should have occupied five or six days. It actually took ten days. To complete the misery they could not be readily sold in Winnipeg and remained on the siding three days till a sale was made farther west, the final destination being reached some days later. Here, of course, the railways are not the sole delinquents; but they are the chief sinners and for whom there is little or no excuse.

By Mr. Chisholm (Huron):

Q. Do you not think that if men were accustomed to having their fruit properly inspected and were instructed in the methods of packing and cooling and carrying the fruit, you would avoid all this ignorance on the part of the people?

A. That is very true.

Q. I think the inspector should be sent right to the orchard to instruct the packers with regard to that matter so that they would know how to pack apples and how to ship them?

A. This is one of the reasons why I so strongly advocate co-operative associations. The farmers cannot cool their fruit individually, in a practical way, because it would cost too much; but they can do so if they unite into these co-operative associations as some have done. The individual education which Dr. Chisholm recommends can be given much more effectually by the managers of the association than by inspectors. It is being done already.

By Mr. Chisholm (Huron):

Q. The trouble is the people do not understand that the fruit requires cooling. They ought to be specially instructed?

A. Something is being done to this end; but educational questions are, for the most part, left with the provinces. We should endeavour to impress the provincial authorities with the necessity of a wider education upon this subject, and I am sure the hon. the Minister of Agriculture will be glad to accept any suggestion you may make as to how his department can help. I believe there is no industry we have on the farm to-day that is so important to certain large sections of Canada as the apple industry.

Mr. BURRELL.—I omitted to read one passage in the letter of Mr. Agur which I am anxious to put on record before leaving this matter. It is as follows:—

‘Have we any hopes of the Fruit Marks Act being amended to cover the requirements? If not, we are up against an impossible proposition. The wording we spoke of before you left has been a good thing to be on the boxes to be in the Act, that is the name of the country exporting the fruit to be on the box in large

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letters, thus: 'Fruit from the United States of America.' This was driven home when I was in Victoria a few days ago. I stopped in front of a fruiterer's window, a couple of boxes of apples of 'Mr. Earl's of Lytton.'

That is one of our best packers in British Columbia—'No. 1 apples and up to grade, attracted my attention and along side two boxes from some firm in Washington marked "Extra No. 1" (No. 2 would have been more suitable).'

That is a concrete illustration. The incident of the stranger who came there and saw those British Columbia apples that were properly marked, and the United States apples that were not marked and wondered where the latter came from. That took place right in Victoria.

By Mr. Broder:

Q. You can have no supervision over the producer in the United States. You have got to get at the dealer in this country?

A. Notwithstanding these isolated instances, the volume of evidence goes to show that the American fruit is not usually the poor fruit of the Northwest.

By Mr. Blain:

Q. Why could not the Act be amended so that all the American fruit coming into Canada could be inspected and marked before it is released from the Customs office?

A. That is a suggestion that might well be made to the Dominion authorities, and I am sure the minister will give that careful attention.

THE BRITISH MARKET FOR APPLES.

So far we have spoken of the northwest market only. This is appropriate inasmuch as this market will soon be more important than the export market. Nevertheless, we must not forget that Great Britain takes nearly or somewhat over a million barrels every year. The statistics the last three years may interest you. Of all the apples that were imported into Great Britain, Canada supplied, in 1906, 49 per cent. In 1907 Canada supplied 35 per cent and in 1908 59 per cent. You will notice we are reaching a stage where we are supplying a very large part of the apples used by Great Britain, who is our largest customer. At the same time we ship a large quantity of apples, even to the United States. It may surprise you to find that the business is not all one-sided by any means, and that last year we shipped to the United States 10,751 barrels, importing from that country ourselves a little less than that quantity. So that our exports to the United States more than balance our imports from that country.

By Mr. Sproule:

Q. Is there any source from which you could get any information as to the number of barrels or boxes of apples that are transported or sold to one province from another?

A. Unfortunately there is not.

Q. For instance, say from Ontario or British Columbia to Alberta or Saskatchewan?

A. There are no official figures. The only way that such information could be got would be from the railway authorities. They do not publish this information, and it is somewhat difficult to compile it.

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Q. I understood you to say that the one urgent need was education, and that you have people going around instructing growers and packers. Do you not think it would be valuable as well if you could educate some of them a little along the lines of honesty?

A. We leave that, except incidentally, to their religious advisers.

By Mr. Broder:

Q. Apparently they are not getting along very well with their job?

A. And unfortunately they are not amenable to the Agriculture Committee. It is seldom we have to fine a grower. It is the packer who does the fraudulent work.

Q. In our country they sell the fruit right out?

A. Yes, and it is the packers that are responsible, and it is practically the packers that are accountable for most of the evils that exist in connection with our apple grading and marking. That can be got over very largely if we could only impress upon the public the necessity of having these co-operative associations, the value of combining themselves in that form so as to get the advantage of this better packing.

British Columbia and Ontario loom large in the apple business. But let me point out that Nova Scotia has during the past year done an extraordinary trade in apples. That province has grown and shipped 600,000 barrels of apples during the past season, which was the largest, I think, of any year on record.

By Mr. Schaffner:

Q. You would not leave the impression that Ontario and British Columbia supply all the apples. Nova Scotia surpasses them both?

A. Nova Scotia is not, perhaps, advertised as well as British Columbia, not so well even as Ontario.

By Mr. Broder:

Q. British Columbia has the American spirit?

A. Ontario and Nova Scotia will have to follow its example. I would say with respect to Nova Scotia that they have a splendid district in that province for growing apples.

Mr. SCHAFFNER.—They certainly have.

A. And they produce varieties there that need fear no competition in any part of the world.

COLD STORAGE FOR APPLES.

By Mr. Gordon (Kent):

Q. Have you any data showing the number of barrels of apples that pass through the cold storage warehouse at St. John, N.B., and the benefit that is derived from that warehouse?

A. Information is scarcely available in that form yet. There were less than 100,000 barrels that went into cold storage there.

Q. Before we pass from the subject, what is your opinion regarding some of the methods to be adopted? To bring a cold storage warehouse into the vicinity of the orchard, what effect would that have upon the production and preservation of the apples provided the farmers were able to take full advantage of it and run it themselves?

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A. It would entirely improve the whole situation. I will answer that question by comparing New York State with southern Ontario. New York State is growing apples under the same conditions as southern Ontario; but they would be out of the winter apple business now were it not for the fact that they have erected large cold storage warehouses that are used for apples only. These warehouses have enabled them to continue in the winter apple growing business and to make it one of the most profitable branches of agriculture that they are engaged in. Undoubtedly the bringing of cold storage warehouses to the points where they can be used by the apple grower locally would improve the conditions in the part of the country where they need protection from the heat early in the fall. Southern Ontario is in that position. If southern Ontario grows apples without cold storage, the fruit must be marketed before the end of December or serious losses will frequently occur.

By Mr. Sealey:

Q. I gather that what Mr. Gordon wanted to arrive at was some explanation as to the result of the St. John cold storage warehouse. For instance, if apples went into cold storage when they were \$2 a barrel and were now realizing \$5 a barrel. If you had some such information as that and it was presented in the report of your address it would go a greater distance towards impressing fruit growers with the advantage and profit of establishing cold storage warehouses in their own vicinity. Could you give any such statement as that?

A. I can perhaps give information that will take the place of a statement as to the operations of the St. John cold storage warehouse. The reason why the figures of the operations of the cold storage warehouse at St. John cannot be quoted this year is that they commenced business a little too late to get the full advantage of the cold storage, and they did not get the class of fruit which they could use to the greatest advantage for cold storage purposes. So that even if their figures were available, and they are not, they would not be fair to the cold storage principle. What I can give you is this: There were apples stored in Montreal under exactly similar conditions, apples that came to Montreal from Ontario for which they paid \$2.25 per barrel. Those apples remained in cold storage and are selling to-day for \$7, or over, a barrel. Hundreds of barrels are now going into consumption at these figures. Thousands of barrels more could have been sold to Ottawa, Toronto, London and other large cities and towns in southern Ontario which have been almost bare of apples this winter. Those apples, remember, could be kept perfectly in cold storage in Montreal and shipped by the first steamer that goes out in May from this port, and then would be in fine condition to go upon the British market, and would take the place of the Australian apples that come in at this season. This is a use of cold storage which we have not learned yet, but it is perfectly practical.

COLD STORAGE TO EQUALIZE PRICES.

By Mr. Gordon (Kent):

Q. Would not a thorough development of the cold storage system mean two things? First, higher prices to the producer, and second lower prices to the consumer? For instance, there are no apples in the country to-day although they are worth as high as \$15 a barrel. If we bring cold storage to the vicinity of the farmer and get him as much as \$1.50 per barrel more, the consumers would have an abundance of apples at the present time at \$3 or \$4 or \$5 per barrel less; would it not be of advantage to both parties?

A. Decidedly, and it would be of advantage, as you say, to both growers and consumers. Cold storage, if properly managed, would bring a better price to the grower and lower prices to the consumers.

By Mr. Sealey:

Q. Can you give us some facts that will show how that works out? The producer gets \$1.50 per barrel more for his fruit, and against that you could show 50 cents for the transportation, and the cost of the cold storage at 40 or 50 cents per barrel. This is a concrete illustration of the practical results to be derived from the development of a cold storage system. If the cold storage were located near the producer the freight one way on those apples would be saved, because they have been taken to Montreal, kept in cold storage there, and shipped back practically to the place where they were produced.

By Mr. Gordon (Kent):

Q. The man who grew them was bound to sell them because he had no means of holding them?

A. Precisely.

COLD STORAGE TO LENGTHEN THE APPLE SEASON.

By Mr. Broder:

Q. Your idea is that we would have a better market in the old country because we would be able to hold the apples until conditions were favourable?

A. We can improve our market at both ends of the season. There is always a demand for early apples, and we may just as well be filling that demand as not; we can do so by simply developing our cold storage facilities. Red Astrachan apples are ripe in Essex and Kent the last week in July. Duchess apples are ready to ship the first and second week in August. If picked and packed carefully in boxes they can be loaded now on refrigerator cars and sent in cold storage to Great Britain, reaching there in as good or better condition as if sent in the ordinary way to our home markets. This would add six weeks to our market at the beginning.

Two months more can be added at the end of the season. Indeed, we can supply the markets of Great Britain with apples every day in the year by the judicious use of cold storage. Last year we took stock from the general cold storage warehouse in Montreal intended for commercial purposes. It was not specially selected as it ought to have been, but was simply put there for home use. It was desirable to have a larger collection of apples for the Franco-British Exposition, and a selection was made from this commercial stock for exhibition purposes. These apples remained in cold storage the winter of 1907-8, and in the spring we put them on board the ship just as commercial apples might have been, and sent them over to the old country and placed them on exhibition. They were shown during May, June, July and August, and there were some of these apples still in prime condition, fit to put upon the table in September when we begin to send in new stock. That shows you that we have ample means of extending our apple season. This has been done, remember, at a cost of 40 cents per barrel for cold storage in Montreal, with just the same facilities for reaching the old country as for ordinary apples reaching the market in prime condition.

By Mr. Schaffner:

Q. You mentioned a certain variety of Nova Scotia apples which are of very high quality?

A. For the earlier apples the Gravensteins need fear no competition, although I am bound to say that I have had specimens from Kaslo and British Columbia that certainly equalled anything I ever saw in Nova Scotia.

Q. That is for looks?

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A. And size. But you can hold the market with Gravensteins; you need not fear.

Q. And Nonpariel?

A. The Nonpariel, King, Golden Russet, Belleflower, Fallawater and Northern Spy are all good varieties in Nova Scotia. These varieties are enough to meet the demand of the trade. It would be better if they reduced the number of varieties.

By Mr. Sproule:

Q. Do you know Mr. Carson of Meaford, Ont.? He tells me he receives equally as high a price in the old country, and frequently a higher price, for Gravenstein apples from Grey, Ont., than he did for the Annapolis valley apples?

A. But so few Gravensteins are grown in Ontario that they do not take a place on the market.

Committee adjourned.

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HOUSE OF COMMONS,
COMMITTEE ROOM NO. 34,
THURSDAY, April 15, 1909.

The Select Standing Committee on Agriculture and Colonization met at 11 o'clock a.m., Mr. Schell, Chairman, presiding.

Mr. McNEILL, Chief of the Fruit Division, was present by recall and submitted the following evidence:—

THE APPLE INDUSTRY.

Mr. McNEILL.—Mr. Chairman and Gentlemen,—I propose this morning, with your permission, to take up the apple industry as fully as time will permit. I have no intention of hiding from you the fact that I think I have a mission. That mission is to present to you such facts as will show you that the apple industry is at least a partial solution of some of the difficulties that beset you as men who are dealing with Dominion problems.

If I can succeed in properly presenting the facts of the case, you will find in this branch of agriculture one means of solving, to a limited extent at least, some of the most difficult questions, social and economic, that are facing you to-day. It is not a panacea, but it offers one way of ameliorating conditions in certain parts of the Dominion that are causing much uneasiness in the minds of statesmen and economists. For instance, we are complaining that the people are leaving Ontario and Nova Scotia and the eastern provinces generally, for the Northwest. We are dissatisfied that the value of eastern land is remaining stationary or being reduced because of the opening of cheap land in the west. We all deplore that our people are not satisfied with the conditions upon their eastern farms, that the young people are growing restive and are crowding the towns and cities only to furnish more victims for the slums and sweat shops. I wish to show you that large areas of cheap land can be most profitably devoted to apple growing, under conditions that will make life a joy and realizing the hopes of those philanthropists who cry: 'Back to the Land.'

MARKETS.

Naturally, the first consideration will be the extent of the market. The demand for Canadian apples is a growing one and is larger now than it ever was before. For convenient reference the following tables have been compiled from the Blue-books:—

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GREEN APPLE EXPORTS FROM CANADA.

| Countries. | 1906. | | 1907. | | 1908. | |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| | Brls. | \$ | Brls. | \$ | Brls. | \$ |
| Great Britain..... | 1,029,418 | 3,475,825 | 933,769 | 2,511,195 | 1,490,311 | 4,422,722 |
| Australia..... | 156 | 1,176 | | | 1 | 5 |
| Bermuda..... | 1,066 | 2,987 | 1,095 | 2,965 | 1,521 | 4,781 |
| British Africa..... | 6,769 | 22,534 | 9,572 | 23,967 | 4,824 | 15,704 |
| British Guiana..... | 34 | 102 | 13 | 34 | 27 | 69 |
| British West Indies..... | 118 | 368 | 441 | 1,365 | 233 | 686 |
| Fiji..... | 26 | 214 | 86 | 329 | 41 | 312 |
| Hong Kong..... | 7 | 35 | 2 | 17 | 17 | 141 |
| Newfoundland..... | 11,095 | 32,690 | 16,644 | 52,438 | 6,619 | 14,563 |
| New Zealand..... | 73 | 455 | 53 | 367 | | |
| Belgium..... | 110 | 289 | 2,727 | 8,257 | 767 | 2,409 |
| China..... | 23 | 120 | 71 | 304 | 9 | 36 |
| Cuba..... | 767 | 3,114 | 542 | 1,679 | 603 | 2,146 |
| Denmark..... | 772 | 2,241 | 728 | 1,552 | 1,832 | 5,173 |
| France..... | 55,862 | 209,131 | 3,146 | 10,744 | 8,016 | 26,871 |
| Germany..... | 63,221 | 197,001 | 217 | 566 | 18 | 82 |
| Holland..... | 3,473 | 10,359 | 255 | 555 | 275 | 125 |
| Mexico..... | 204 | 774 | 350 | 1,101 | 102 | 410 |
| St. Pierre..... | 169 | 476 | 349 | 791 | 140 | 313 |
| Norway..... | 150 | 600 | 1,450 | 3,050 | | |
| United States..... | 44,051 | 122,991 | 5,381 | 10,752 | 111,042 | 317,004 |
| Italy..... | | | 174 | 174 | | |
| Sweden..... | | | 745 | 1,850 | 2,424 | 6,611 |
| Russia..... | | | 100 | 400 | 200 | 600 |
| Japan..... | | | 6 | 37 | 1 | 3 |
| British East Indies..... | | | 45 | 119 | | |
| Other countries..... | | | | | 27 | 78 |

QUANTITIES.

| Fiscal Years. | Great Britain. | United States. | Other Countries. | Totals. |
|---------------|----------------|----------------|------------------|-----------|
| | Brls. | Brls. | Brls. | Brls. |
| 1896..... | 504,680 | 54,062 | 8,440 | 567,182 |
| 1897..... | 1,579,272 | 54,348 | 30,850 | 1,664,470 |
| 1898..... | 414,181 | 7,333 | 17,304 | 439,418 |
| 1899..... | 972,125 | 81,204 | 21,739 | 1,075,068 |
| 1900..... | 896,935 | 23,529 | 29,994 | 956,458 |
| 1901..... | 643,945 | 12,502 | 22,204 | 678,651 |
| 1902..... | 490,338 | 17,162 | 8,715 | 516,215 |
| 1903..... | 973,805 | 6,064 | 20,659 | 1,000,528 |
| 1904..... | 1,513,744 | 14,899 | 69,971 | 1,598,614 |
| 1905..... | 86,222 | 16,784 | 34,142 | 1,037,148 |
| 1906..... | 1,029,418 | 44,051 | 144,095 | 1,217,564 |
| 1907*..... | 933,769 | 5,381 | 38,811 | 977,961 |
| 1908..... | 1,490,311 | 111,042 | 27,777 | 1,629,130 |

*Nine months.

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VALUES.

| Fiscal Years. | Great Britain. | United States. | Other Countries. | Totals. |
|---------------|-------------------|-------------------|---------------------|-----------|
| | \$ | \$ | \$ | \$ |
| 1896..... | 1,303,451 | 85,419 | 27,600 | 1,416,470 |
| 1897..... | 2,409,787 | 50,498 | 42,683 | 2,502,968 |
| 1898..... | 1,239,777 | 18,879 | 48,025 | 1,306,681 |
| 1899..... | 2,412,728 | 156,191 | 52,433 | 2,621,352 |
| 1900..... | 2,423,079 | 73,625 | 81,529 | 2,578,233 |
| 1901..... | 1,422,665 | 18,188 | 42,074 | 1,482,927 |
| 1902..... | 1,495,107 | 49,348 | 22,353 | 1,566,808 |
| 1903..... | 2,696,927 | 11,508 | 50,289 | 2,758,724 |
| 1904..... | 4,379,826 | 34,579 | 176,388 | 4,590,793 |
| 1905..... | 2,513,599 | 31,438 | 82,430 | 2,627,467 |
| 1906..... | 3,475,825 | 122,991 | 484,666 | 4,083,482 |
| 1907*..... | 2,511,195 | 10,752 | 112,661 | 2,634,608 |
| 1908..... | 4,422,772 | 317,904 | 81,918 | 4,822,594 |

*Nine months.

TOTAL IMPORTS OF APPLES INTO GREAT BRITAIN.

| Year. | Quantity. | Value. | Per Cent Imported from Canada. |
|-----------|-----------|-----------|---|
| | Bbls. | £ | |
| 1906..... | 2,097,119 | 1,753,577 | 49 |
| 1907..... | 2,632,913 | 2,231,327 | 35 |
| 1908..... | 2,521,179 | 2,079,703 | 59 |

EXPORTS OF DRIED APPLES FROM UNITED STATES.

| Year. | Pounds. |
|-----------|------------|
| 1902..... | 15,664,468 |
| 1903..... | 39,646,297 |
| 1904..... | 48,301,665 |
| 1905..... | 39,272,890 |
| 1906..... | 27,852,831 |

EXPORTS OF EVAPORATED STOCK FROM CANADA.
(IN POUNDS.)

| Year. | Total Exports. | To United States. | To Holland. | To Germany. |
|-----------|-------------------|-------------------------|----------------|----------------|
| 1900..... | 4,181,038 | 149,436 | 1,213,333 | 1,735,387 |
| 1901..... | 4,325,854 | 447,148 | 1,300,124 | 1,783,867 |
| 1902..... | 1,685,960 | 51,780 | 635,462 | 787,224 |
| 1903..... | 7,795,360 | 271,221 | 2,555,309 | 4,289,314 |
| 1904..... | 6,981,391 | 441,953 | 2,163,338 | 3,673,734 |
| 1905..... | 6,052,562 | 304,679 | 2,711,077 | 2,426,445 |
| 1906..... | 3,651,260 | 60,691 | 2,013,353 | 1,327,390 |
| 1907..... | 3,718,372 | | 3,159,855 | 377,250 |
| 1908..... | 6,939,088 | 1,369,625 | 2,954,390 | 1,640,296 |

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Year by year the number of countries taking green apples from us has increased and, though the quantity taken by many of them is not larger, it shows that we are able to reach those countries, and will be able to take advantage of any increased demand that may arise in the future. Indeed, it is safe to say that the exports to any of these countries may be very largely increased if the price of apples to consumers were lowered and the quality of them raised. And the apple industry as a whole would be greatly benefited if both events were consummated. In case of an abnormally large crop, we have the roads opened to markets that will absorb a very large surplus. We are supplying Great Britain with half of her immense import, and even to the United States, which is our only serious competitor, we ship a quantity equal to one-fifth of the apples grown this year in Nova Scotia. In winter apples we need fear neither competition nor the loss of our market.

APPLE CROP OF THE UNITED STATES.

The statistical reports of the United States for the season 1906-7 show that the apple crop of the United States reached nearly 60 million barrels. Last year the United States crop was estimated at less than 25 millions, notwithstanding the large planting which is being done in some portions of the country. Upon the whole the apple crop is not increasing rapidly in the United States even in normal years. The increase, such as it is, has been almost wholly in the middle western States, growing apples that go into consumption under natural conditions before the New Year. Our winter apples have less competition than formerly except from fruit that has to bear the extra cost of cold storage.

It is possible to show you that Canada may well hope in the very near future to monopolize practically the whole trade in export winter apples from the continent of North America. The manufacturing urban population of the United States is increasing so rapidly that it would not be a matter of surprise to see them importing apples, especially of the winter varieties, in large quantities.

OUR HOME MARKET.

Our home market, however, will continue to absorb the greater portion of our fruit. The area of Canada suitable for growing apples is small compared with the total habitable territory. Therefore, we may expect, with the enormous increase in population in the Northwest and a more than corresponding development of manufactures in the older provinces, that the market for apples, even now not well supplied, will increase enormously in the near future. We need, therefore, have no fears with reference to markets. They are assured.

EVAPORATED APPLES.

A reference to statistics of evaporated fruit shows that we have done very little in this line, and the inference is fair that considerable expansion may be expected here. With a total production in 1908, of 25 million barrels and an export of 1 million barrels of green fruit, the United States exports 35,054,763 pounds of evaporated apples. Canada, with a production of about ten to twelve million barrels and an export of one and a half million barrels of green fruit, exports only 6,939,088 pounds of evaporated apples.

APPLE PRODUCING DISTRICTS.

Commercial orchards are confined, for the most part, to the three provinces of Nova Scotia, Ontario and British Columbia.

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Nova Scotia.—In Nova Scotia the industry is followed almost exclusively in the Annapolis, Cornwallis and Gasperaux valleys. The valley of the Avon is also a favoured section and some excellent orchards are being developed in Lunenburg and Digby counties.

THE BENEFITS OF ORCHARDING.

In Kings and Annapolis counties we have a most favourable opportunity of studying the beneficial effects of apple growing. The soil is not especially fertile, indeed, judged by western standards some of it is very poor; and yet the whole of these valleys are made literally to blossom as the rose. The beauty and perfume of the bloom together with the charm of landscape and climate, make this an early summer tourist resort. But apart from these aesthetic and incidental features, the districts where orcharding is followed as a specialty, constitute an interesting object lesson on the advantages of this industry.

VALUE OF ORCHARD LAND.

Land that could not be valued for any other purpose at more than \$50 to \$75 per acre, and much at less than these figures, in many cases, has been planted to trees. The total cost for all expenses including interest on investment before the trees came into bearing, would not average more than \$100 per acre. The revenue derived from an orchard in full bearing nets over all running expenses, varying according to localities, varieties, skill, &c., from \$25 per acre to \$200 per acre. Of course we cannot expect to get the capitalized value of the orchards, because it is worth this only to the man who has some skill as an orchardist and who can give the work his personal attention. It is not worth this value to the absentee investor. But making all these deductions we find that in the open market this land worth originally only \$50 to \$75 per acre for general purposes has risen in value when developed at a comparatively small cost in apple orchards two hundred, three hundred and sometimes four hundred per cent.

We find that when the land was devoted to general farming alone the homes were isolated, and had few conveniences and too often lacked what should be considered the necessities of Canadian country homes. As a rule, not more than one family was located on each hundred acres, more or less, and consequently the advantages of social intercourse and of church and school privileges and of postal and transportation facilities were enjoyed only to a limited extent. The contrast is great indeed between these conditions and the conditions that actually prevail now in that part of the Annapolis and Cornwallis valleys where orcharding is made a specialty and general farming subsidiary. Fruit-growers' homes have all the modern conveniences even to telephones and in some cases electric lighting. Social intercourse is easy and frequent. Public halls, libraries, lectures, concerts and other public entertainments are at the command of all.

St. John Valley, New Brunswick.—New Brunswick has never figured as a large apple growing district. Nevertheless, in passing I wish to remind you that during the last few years the St. John Valley has shipped apples to the United States as well as to Great Britain. The conditions are such that I verily believe the St. John Valley—that portion from St. John to the city of Fredericton—could be made just as profitable as an apple-growing section as the Annapolis valley. It is simply a matter of education, enterprise and a knowledge of the opportunities the people have before them. They can grow there the finest Duchess apples that can be grown anywhere. The Bishop Pippin grows to perfection. This is an apple which so far as its intrinsic merit is concerned, will compare favourably in the estimation of many with the McIntosh Red or the Gravenstein.

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Ontario.—Leaving Nova Scotia and passing Quebec where they have great possibilities in the finest dessert apples, we reach the second large apple growing section in the central southern portion of Ontario. If we draw a line from the Ottawa river somewhere about Pembroke west to the Georgian bay, we may say that commercial apple-growing is possible in Ontario south of this line. The same varieties cannot be grown over this large area, nor would the cultural and market conditions be the same. Later I propose to speak more particularly of this great apple area.

British Columbia.—The most westerly apple district is in British Columbia. Although the quantity of fruit produced there is not yet large, indeed scarcely more than enough to supply their own needs, the promise is great. The enormous possibilities of fruit-growing here are only beginning to be appreciated. British Columbia is the one province where fruit-growing is recognized as the chief agricultural industry, and the intelligent enterprise shown by the provincial authorities and the owners of real estate in advertising this industry, might, with advantage, be copied by Ontario and the maritime provinces.

Again, in British Columbia we have a demonstration of the advantages of fruit-growing, and particularly apple-growing, over other lines of farming in those parts of the province suitable for that purpose. Mining and ranching are followed as large industries. One need only make a comparison between the present condition of the Coldstream Ranch divided into many successful fruit farms and its former condition as a cattle ranch, to note how desirable it is that fruit-growing should be encouraged to the fullest possible extent.

MOST FAVOURED CANADIAN FRUIT SECTION.

I do not wish to make any comparisons between provinces, but rather to show that wherever fruit-growing is established as a specialty there you find conditions that make for the highest type of citizenship with the greatest measure of prosperity and contentment. I am frequently asked where I would advise a man to go to follow this business with the greatest advantage. My reply, after years of study of the subject, is that if we do not take into consideration matters purely personal, but regard simply the dividend that can be made on the time, skill and capital invested, it will make practically no difference where he goes in the fruit-growing belt. If the prospective planter has little or no experience in fruit-growing, he will locate where he can take advantage of the experience of his neighbours. If he has only a little capital, he will begin with small fruit and a nearby market, and make large plantations as his capital and opportunities increase. If he has unlimited capital, he will be at no loss to invest it in a dozen different lines of fruit-growing as chance or his tastes may suggest. The conditions are so varied that the predilections of almost every one can be satisfied. For long keeping winter varieties of apples, there is a wide range of choice in British Columbia, Ontario or Nova Scotia. For the finest dessert apples the province of Quebec and the eastern part of Ontario cannot be excelled. For peaches, pears, grapes and tender fruits generally, parts of British Columbia and southern Ontario offer every facility.

The fruit districts outlined in the accompanying maps (facing page 150) embrace, in a general way, territory as follows:—

District No. 1.—Counties north of Lake Erie.

District No. 2.—Counties on Lake Huron and inland to York county.

District No. 3.—Counties bordering on Lake Ontario north to Sharbot lake and Georgian bay.

District No. 4.—Ottawa and St. Lawrence valleys to Lake St. Peter and southwestern Quebec.

District No. 5.—New Brunswick with northeastern Quebec.

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District No. 6.—Hants, Kings, Annapolis and Digby counties, Nova Scotia.

District No. 7.—Nova Scotia not included in District 6.

District No. 8.—Prince Edward Island.

The leading varieties of apples grown in these districts and the varieties that can be recommended for commercial orchards, are as follows :—

District No. 1.—Baldwin, Spy, King, R. I. Greening, Golden Russet, Ben Davis, Duchess, Fameuse (Snow), Wealthy and Blenheim.

District No. 2.—Spy, Baldwin, King, R. I. Greening, Ben Davis, Golden Russet, McIntosh Red, Wealthy, Duchess and Ontario.

District No. 3.—Spy, Baldwin, Ben Davis, Stark, Golden Russet, R. I. Greening, Wealthy, Fameuse (Snow), and Duchess.

District No. 4.—McIntosh Red, Wealthy, Duchess, Alexander, Fameuse (Snow), and Yellow Transparent.

District No. 5.—Alexander, Fameuse (Snow), Wealthy, Duchess, Baldwin, McIntosh, Russet, St. Lawrence, Yellow Transparent and Tetofsky.

District No. 6.—Duchess, Gravenstein, King, McIntosh Red, Nonpareil, Golden Russet, Bellflower, Wealthy, Fallawater, Northern Spy, Stark and Ben Davis.

District No. 7.—Baldwin, Gravenstein, King, Nonpareil, Spy, Wealthy, Stark, Ben Davis and Duchess.

District No. 8.—Spy, Ben Davis, Alexander, Wealthy, Gravenstein, Stark, Baxter, Duchess, Russet, Wolf River and Transparent.

ELEMENTS OF A GOOD FRUIT LOCATION.

Even though we admit that with equal industry, capital and skill a fruit-grower may do equally well financially in any one of the fruit sections, yet there is the greatest variety of soil and climatic conditions which must all be duly considered by the prospective planter if he would avoid serious loss and disappointment. These conditions depend upon latitude, altitude, proximity to large bodies of water, soil constituents, contour lines, rainfall and extremes of temperature. Many of the facts in connection with these phenomena can be obtained from reports, but the data is so complicated and the difficulty of estimating the value of it is so great that the only trustworthy guide is the observation on the spot of actual results taken in connection with the facts gleaned from weather reports and geological surveys.

FRUIT DISTRICTS OF ONTARIO.

Before you is a map of Ontario, worked out with special reference to apples but which serves in a crude way all commercial fruits. I have prepared maps with less detail for Quebec and the maritime provinces. An analysis of these fruit districts in detail is made for the purpose of showing the kind of information that should be carefully worked out, to assist the planter and perhaps be a guide for people from other countries who might wish to engage in fruit-growing in Canada.

DISTRICT No. 1.—In the district north of Lake Erie, marked No. 1, all the fruits of the temperate zone can be grown. Apples, pears, plums, peaches, cherries, apricots, grapes, all grow to perfection. Even figs have been grown outdoors with a little winter protection in Niagara district. There are vines of English ivy growing outdoors unprotected in Essex county for twenty years, to my knowledge. Melons, tomatoes, sweet potatoes and lima beans all ripen perfectly.

The rainfall is not heavy and is evenly distributed. The prevailing soil is glacial clay frequently running to clay loam, and in Norfolk county and part of Elgin to a sand in some places very light. Once or twice during the winter the temperature will sink to zero or a few degrees below it. There are usually about one hundred and fifty frostless days or even two hundred in the case of Pelee Island. July and August

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are usually very hot and little rain falls. September, also, is frequently warm and dry. After the first week in October light frosts are frequent at night, but mangles and other root crops are seldom injured till after the first of November. These conditions have a marked effect on the lines of fruit-growing that can be profitably followed. The hot bright weather of July, August and September ripens tomatoes, peaches and grapes perfectly which cannot be done in the open air in England or even on the coast in British Columbia.

But I wish to speak more particularly of apples and the effect which climatic influence has on the industry here. The early settlers, U. E. Loyalists from the south, the proteges of Col. Talbot as well as the English settlers who came as the result of the occupation of Fort Malden, near Amherstburg, had all been used to apple orchards and made large plantations of their own on every clearing. The region became famous for its Colverts, Jenettings, Baldwins, Spys, Golden Russets and Greenings and continued so to the present time. But there was this difference. At first the early fruit glutted the limited home market, but of late years even the winter apples were not in demand and apple orcharding fell into disrepute. What has happened? Just this. The other portions of Ontario began to grow winter apples and purchasers found that the winter apples grown in the colder portions of Ontario kept better for winter use, and this gave greater satisfaction. If apples were scarce in the fall then there was a demand for southern apples as they could be consumed before winter. With this irregular demand and poor price the orchards were allowed to fall into neglect and the fruit rapidly deteriorated. But events move quickly in these days. Within the last six years two things have happened that completely change the situation. Cold storage transportation on steamships has been perfected and an extraordinary increase has taken place in the population of the northwest. These two events have given us two markets for our early maturing fruit, Great Britain and the northwest. Once more apples have become profitable in southern Ontario. Do you want to know how profitable? Let me give you two sample cases. The apples in a certain orchard of about 5 acres near Simcoe in Norfolk, sold six years ago for \$180, just as they came from the trees. Next year the title to the land and orchard passed to Mr. A. Gilbertson who began to cultivate, prune, spray and thin the fruit and otherwise give it good culture. The revenue from the five acres increased year by year, and last year yielded the comfortable sum of \$1,500. Its total current expenses and interest on investment in connection with the five acres was less than \$200. Another man in the same neighbourhood also a skilled orchardist but with only a few trees, made a profit of \$10 per tree. These are large profits, so large indeed, that beside them Standard Oil dividends appear almost trivial. But I assure you no facts could be better authenticated.

But to return to our apple survey may. The hot weather of August and September in District No. 1, matures the winter varieties so early that they must go into consumption before the new year in the natural course of things. No prudent merchant will buy them to store for winter use because he knows that they will not keep without a heavy percentage of loss. For the present there is a good market for them even when sold in the fall for immediate consumption but if apples are cheap at any period of the year they will be cheap during November and December, just when the winter apples of this district are on the market. It is for this reason that I do not advise the planting of winter varieties in District No. 1 unless the orchardists will grow enough to justify them in putting up a cold storage warehouse. The people of New York State who have exactly the same conditions have done so and thus saved their business. It cost from 30 to 50 cents a barrel to cold store; so in the absence of cold storage, and considering the cost, I advise that only early apples be planted here. There is no necessity for sacrificing their winter apple trees. Take proper care of them to grow good fruit; unite the fruit growers into co-operative associations and use the best facilities we have now in transportation, and their profits

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will be five times what any other branch of farming but fruit growing will yield them.

MARKET FOR EARLY APPLES.

But the demand for early apples is insistent. We have the markets of the north-west assured, and the markets of Great Britain are always open to us. We have not the fruit to supply the present demand and have not had it during the past five or six years that we have had the transportation facilities to reach it. Little or no planting of early apples is being done here, and if a beginning is made now it will be six to eight years before we have any crop to sell. In the meantime the markets will develop far more rapidly than in the past. If a million early apple trees were judiciously planted this spring in District No. 1 of this map, they would not come into bearing soon enough to supply the demand. There is no prospect that the farmers and fruit growers of this section will be aroused in the near future to a proper sense of their opportunities.

The only large planting of early apple trees in this district with which I am acquainted is one lot of a thousand trees. Even intelligent and experienced fruit growers in the neighbourhood held up their hands in astonishment at the audacity of a planter putting in a thousand trees of early apples. 'Where will you get your market for all these?' they said. It was in vain that they were told that the market already existed that would absorb the product of these thousand trees in a single day. But this is incidental and for the purpose of showing the application of this fruit survey of the Province of Ontario.

DISTRICT No. 2.—Referring to the map of Ontario, the line marking the divisions between District No. 1 and No. 2 follows fairly closely the contour-line marking an elevation of seven hundred feet above the level of the sea or somewhat less than two hundred feet above the level of Lake Erie. You will also note that in the central part of Ontario, including the northern part of Wellington County, the northern part of Waterloo County, three townships in Perth County, and a very large part of the County of Grey, there is a district marked No. 4. The dividing line between District No. 2 and this portion of District 4 follows very closely an elevation of one thousand feet above the level of the sea or about four hundred feet above the level of Lake Huron, Georgian Bay and Lake Erie.

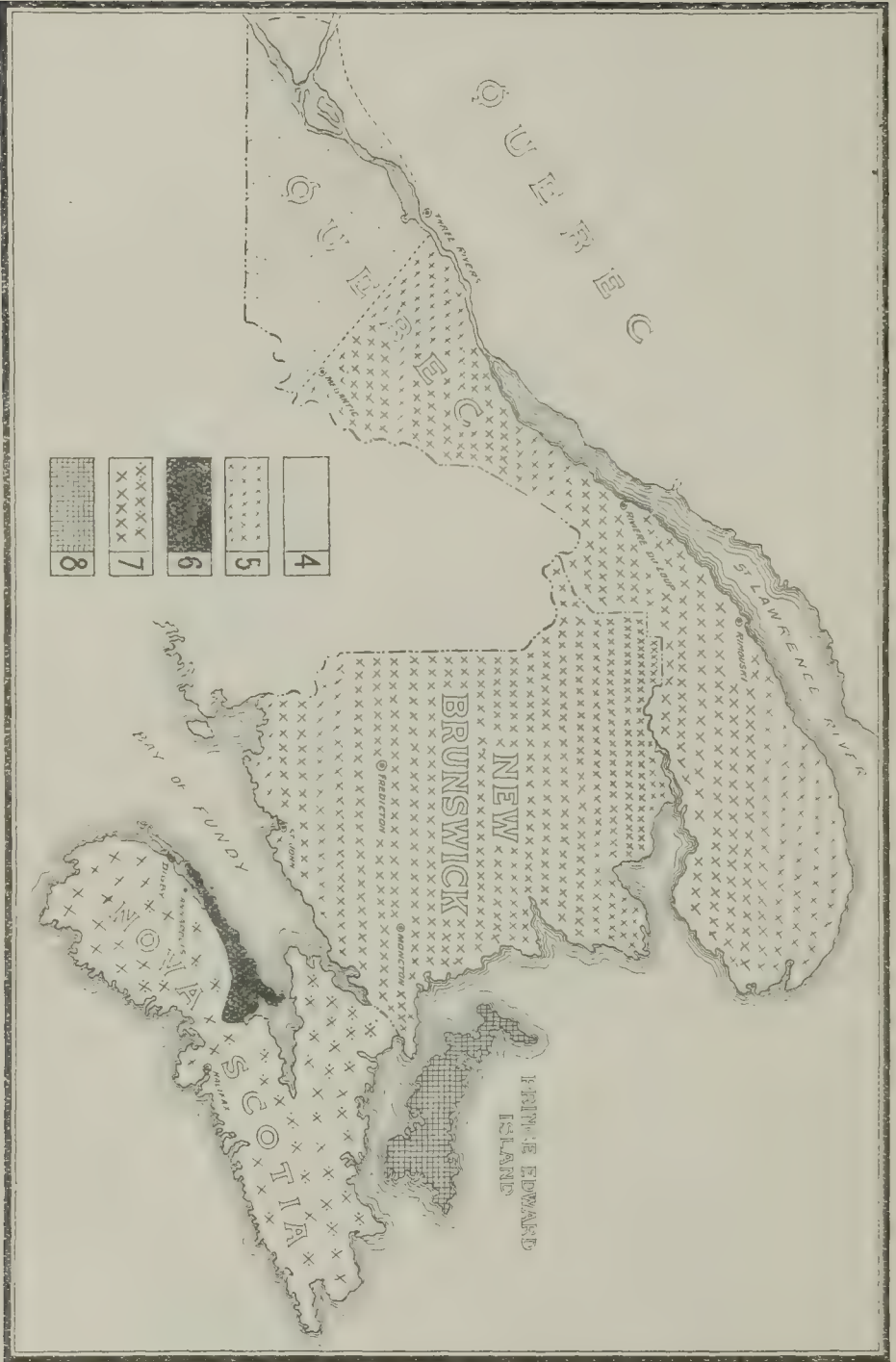
DISTRICT No. 3.—North of Lake Ontario and including a small territory on the Georgian Bay is District No. 3, and north of District No. 3 is the larger part of District No. 4. The division between Districts 3 and 4 in the north is drawn to include in District 3 the Trent river and lakes, and extends eastward as far as Frontenac County and to the St. Lawrence river at Kingston.

These divisions are made with special reference to apples. Districts 2 and 3 grow the same varieties and are specially suited for the winter varieties. I have made a division between 2 and 3 for other than climatic reasons. In District 2 orchard planting began much earlier in the history of apple growing, and it became the custom to plant a small orchard of one to five acres on every hundred acre farm. In District 3 the orchard planting began later when the export market for winter varieties was well established. Consequently, the planting was done with more confidence in larger orchards. The growing of winter apples became a specialty. This is peculiarly the district of large orchards of winter varieties. District No. 2 is equally good as far as soil and climate are concerned, but the prevalence of the small orchard rather counted against the planting for commercial purposes. A small orchard is apt to be neglected, and the profits, though fairly large even in this neglected condition for the capital and current expenses invested, are not apt to be striking. Hence District 2 is an area of small orchards but fairly numerous. There



Fruit Districts of Ontario.

Fruit Districts of Quebec and Maritime Provinces.



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is no reason why the whole of Districts 2 and 3 should not be given up almost exclusively to winter apples.

DISTRICT No. 4.—As much cannot be said for District 4. This district has climatic conditions so severe that the winter varieties are not hardy in the tree. Winter varieties, such as the Greening and Baldwin to a varied degree, are usually somewhat tender in the tree, while the early varieties, such as the Duchess, Yellow Transparent and the Russian varieties generally, are very hardy in the tree. It is for this reason that we find the greater number of the early varieties in District 4, and the less favoured portions of 2 and 3; very few of them comparatively, have been planted in District 1. Had market considerations solely been considered this would have been just reversed. The early apples would have been planted in District 1 and other varieties would have been consigned to Districts 2 and 3.

I would not recommend the planting of early varieties for market purposes in Districts 2 and 3. These districts are peculiarly fitted for winter varieties, and if the advantages which they possess can be properly impressed upon the owners of the land, this will become ultimately the largest area of winter apples on the continent. No other part of Canada of which we have any knowledge at present has the advantages of this district. The only competitors will be in New York and the New England States, New York being the most formidable competitor. But New York State is for the most part in the same condition as District 1 in Ontario; their winter apples ripen too early in the fall making it absolutely necessary, to prevent serious loss, that they should use cold storage warehouses. This is quite unnecessary for Districts 2 and 3 in Ontario for the winter apple trade as carried on at the present time.

The apples, for instance, in the County of Huron and in the County of Northumberland, to take them as samples of the whole district, ripen from the middle to the end of October, just before the cold weather of the fall sets in. In fact, it is a matter of anxiety frequently with the orchardist to get sufficient maturity on the tree and yet not leave the apples until there is danger of serious freezing in the fall. When the apples are picked in this district and placed in ordinary storehouses, they go practically into a natural cold storage. The doors and windows and ventilators are opened during the night, when the temperature falls below the freezing point, cooling the fruit and the interior of the warehouse. The doors and windows are closed again if the day promises to be warm; and when cold weather sets in permanently they have simply to be protected from the outside cold which can be admitted as required through ventilators to keep the apples practically in cold storage until the first of March.

This condition has been taken advantage of more particularly in the counties of Durham and Northumberland. At Colborne, a comparatively small village, there are nine warehouses, giving a total capacity of somewhat less than a hundred thousand barrels. Brighton, a few miles further east, has seven warehouses with a capacity for fifty thousand barrels; and Trenton has also several warehouses of the same kind, all catering to the winter apple trade. But in addition to this nearly every town along the north shore of Lake Ontario has one or more warehouses, all used for storing winter apples. The conditions are such that the apples can be picked and roughly graded, placed in barrels without pressing and stored until the winter months when they are re-packed. All defective and below grade apples are rejected and the barrels, properly pressed, are sent forward during the winter to the markets of Great Britain.

From the fact that the growers of this district do not need cold storage to command the markets for winter apples at this season, it is readily seen that they have an advantage of the extra cost of cold storage in other districts growing winter apples. This cost can be placed roughly at from 25 to 50 cents per barrel. It needs

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no further demonstration to show that, when the price of winter apples falls to the mere cost of production, the growers of Districts 2 and 3 have an advantage of the cost of cold storage, which as I have said is from 25 to 50 cents per barrel. This virtually insures the trade in winter apples to this part of North America. There are, indeed, a few small sections of the New England States and part of New York State where the conditions are somewhat similar, but there are no large areas where it can be followed to the extent it can here; and it is by no means hazardous to predict that these Districts 2 and 3 will ultimately be the great winter apple growing district of North America.

Permit me a word here of explanation that the lines which are drawn separating the different fruit districts are by no means to be considered as marking off at contiguous points great differences in climatic condition. As a matter of fact, there are no definite dividing lines between any two sections. District No. 1 insensibly fades into District No. 2; and District No. 2 joins by imperceptible degrees District No. 4. Thus it is quite possible that within District No. 2, as it is marked upon the map, may be found conditions credited to District No. 1. Indeed it may be mentioned specifically that in the neighborhood of Sarnia and, generally, near the shore of Lake Huron, the climatic and soil conditions are such that it approaches very nearly the conditions of District No. 1. Several large peach orchards are bearing quite successfully along this coast and it is an exceedingly favourable district for plums. So, too, in District No. 4, especially along the valleys of the Beaver and Saugeen in Grey and of the Maitland further South, there are many localities where winter apples may be grown quite successfully. Indeed, some peaches as fine as anyone could wish to eat are grown in the Beaver Valley in the county of Grey. But of necessity any such map making as this must be done in general terms and the exceptions will have to be noted by themselves.

I have no hesitation in saying that I would not recommend the attempt to grow Greenings and Baldwins within the borders of the district marked No. 4. Occasionally an orchard of such varieties may succeed; almost always they would grow for a few years quite successfully and may arrive even at a bearing age. Then in all probability, after ten or twelve years of careful attention, a hard year, such as we had in 1903-4, would come and the whole orchard would be destroyed. The orchard in connection with the Ontario Agricultural College at Guelph has had the most skillful care and every attention which could be bestowed upon trees, and yet the Horticulturist has not succeeded in establishing an orchard of Baldwins, Greenings or Spies, though there are occasional trees that will attest the fact that they are 'almost hardy' in that section. Thousands of dollars have been wasted on nursery stock in those counties in the elevated portion of Ontario in the vain endeavour to establish these tender winter varieties.

Nevertheless District 4 is not out of the apple district, nor do I believe that the industry need be less profitable in this district, growing the very best of dessert apples, than in Districts 2 and 3, growing winter apples, or in District 1, growing early apples. District 4 includes, besides the elevated portions of the counties of Wellington, Waterloo, Perth and Grey, the Eastern portion of the Province between the St. Lawrence and the Ottawa rivers. The trees here must be very hardy. Fortunately we have that feature in such excellent varieties as the Fameuse, McIntosh Red, Wolfe River, Alexander and Wealthy. These are all dessert apples and some of them, such as the Fameuse and McIntosh Red are, perhaps, the best dessert apples grown. The highest priced apple upon the Ottawa market last year was the McIntosh Red. It is not too much to say that the market has never yet been filled with this apple. I need say nothing of the Fameuse (Snow); its virtues are well known.

CONDITIONS OF MARKETING DESSERT APPLES.

The advantage which District 4 has in growing these varieties is that they grow here firmer in texture, standing shipping much better than when grown further

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south. They also ripen somewhat later and come upon the market at a better season. They can also at the present time be harvested and marketed without the aid of any cold storage facilities other than we already have, but it is very desirable for the proper carrying on of any large trade in these apples that cold storage should be provided at the point of production. It is also essential that these varieties, appealing as they do directly and distinctly to the public as a dessert fruit and being somewhat tender to handle, should be wrapped in paper and carefully packed in boxes. If this is done, there is no reason to believe otherwise than that orcharding could be carried on in this district with as much success as in any other part of Ontario.

Indeed, that this is so has been demonstrated already. Mr. Harold Jones of Maitland has a small orchard of four acres of Fameuse. This orchard usually yields him from \$400 to \$800 per annum. Mr. A. D. Harkness of Irena, has a large orchard of these varieties, and, with no advantage as far as soil, climate or location are concerned, is gathering returns quite comparable to those yielded by orchards in other parts of Ontario. This but carries out the assertion which I made to you that as far as profits are concerned, it does not matter which part of the Canadian fruit belt is selected for orcharding.

ORCHARDING AND DISTRIBUTION OF POPULATION.

Before leaving the map of Ontario, I would like to give an illustration showing how apple growing may have a very effectual bearing on the problem of the distribution of the population. As a Dominion official it is not for me to have any prejudices as to how the population is distributed. I am equally bound to report faithfully facts as I observe them, leaving it to others to draw conclusions and take action.

North Middlesex is situated as you see in District No. 2 of this map. I was quite familiar with the district in the neighborhood of Ailsa Craig forty or forty-five years ago just as the primeval forests were being cleared away. Long years since the original log houses have been replaced with substantial structures, frame or brick, built when each hundred acres was occupied by a farmer and his family engaged in mixed farming. Since that time a very marked change has taken place, the exact causes for which it might be hard to explain. The land is eminently suited for any kind of ordinary farm crop and particularly for apples. On visiting the neighbourhood recently I found that many of these farm houses were unoccupied and the farms are given up in most cases to grazing, for which I am bound to say they could get no better land. Instead of each hundred acres supporting a family, now large blocks of land are held by single individuals, all of whom are engaged in fattening cattle. One grazier has control of fifteen hundred acres. I inquired minutely as to the number of men he employed. It is reported to me that he keeps one man by the year and hires a few men occasionally to fix fences or for other purposes, but these are only employed for a few days at a time in the spring. This man is only one of several engaged in the same line of work. And what is the result? The district is being practically depopulated. The farm houses are going to decay. The village merchants find their trade gone. One school that formerly employed five teachers now employs only three; and generally things look as if there had been a decline. This, however, is not because the business of grazing is not carried on properly. In fact no finer breed of cattle will be found in any part of Canada, and the district has the reputation of sending the very best grade of fat cattle to the British market.

But how about the land?—Has it increased or decreased in value? Some idea of this can be obtained from the rentals which are being paid, because much of this land is not owned by the cattlemen but rented. The usual rental is \$2 per acre.

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Capitalize this at a fair rate of interest and the present value of the land is about \$40 per acre, certainly not more than \$50. Now compare this with the conditions we will see in the neighbourhood of Ingersoll, where the land is no better, but where they are making the growing of apples a greater feature in farm work, even if they are not making a specialty of it. As a matter of fact even here the farmers do not appreciate the value of orcharding as they should and, though they are getting fair returns from their orchards under any circumstances, yet they are neglecting their orchards almost universally.

Some of these neglected orchards have been rented by a shrewd farmer who formerly made a specialty of dairying but who, being a good bookkeeper, soon found that he was getting exceptionally large returns from his orchard. He conceived the idea of offering the owners of these neglected orchards a rental for them. The rent varies slightly but in no cases falls below \$15 per acre, running at about \$20 for the most part. If we capitalize this as we did the rent for the grazing land in North Middlesex, we find that it places the value of the orchard land at something between \$400 and \$500 per acre. It is true the original cost for the orchard was something more than for the grazing land, but the capital invested in the orchard over the grazing land is certainly not more than \$100 so that even deducting the original investment, we have the value of orchards at eight or ten times that of grazing land.

The difference is not in the original quality of the land, not in the climatic conditions, because these are good in both cases; the difference is in the use to which the land is put. If it is put to grazing it is worth \$50 per acre; if it is put to orcharding it is worth from \$300 to \$500 per acre. The natural conclusion would be that grazing should not be followed in this district and that orcharding should. As a matter of fact, the grazier must have cheap land to compete with his finished product in the markets of the world; and he must either move out to where the land is cheap as, for instance, in the great North West, or he must make the land cheap where he is, as has been done in this district to which I refer.

To show that the rent which was paid for the orchards in the neighbourhood of Ingersoll was not above the average, I might refer you to the rent paid by Mr. Tweddle for medium or neglected orchard in the neighbourhood of Fruitland in Wentworth County. Mr. Tweddle adopted a plan similar to that adopted by Mr. Harris in the neighbourhood of Ingersoll, and he paid about the same rental or a little less as the orchards near Fruitland were perhaps not quite so good as those near Ingersoll, but in no case did the rental fall below \$15 per acre.

THE SELLING PRICE OF ORCHARDS.

I quote these actual instances of the rental of orchard lands so as to fix the value which is placed upon the orchard land by a process that appears to find favour at least with the loan societies. It would be quite easy to fix it also by the selling value of the orchards in full production. Taking this method, I may refer you to several sales of orchard land that have taken place in Northumberland county, where the value of orchards is being appreciated; orchards in full bearing have changed hands at figures from \$200 to \$400 per acre. But orchards by themselves in full bearing very rarely change hands, and where orchards are sold with a part of a general farm, usually the orchard is not appreciated at its full value; first, because the owner is usually a poor bookkeeper and does not know what are really the money makers and so lumps it with the rest of the farm. The buyer is in a somewhat similar position and frequently gets more value in a ten acre orchard than in the remaining 90 acres, though he probably estimates it at a comparatively trifling value.

REVENUE FROM ORCHARDS.

The third method is by computing the revenue derived from the orchards just as they are being worked by the owners at the present time. The fruit division sent

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out a schedule to about three thousand owners of orchards, large and small, well cared for and neglected. The result was, of course, extremely interesting. Many of the orchards, as was to be expected, were valued as the source of the fruit for the family and the surplus fruit that grew upon the trees was not sold to advantage. These in a few cases were an actual bill of expense to the owners. Perhaps 30 per cent of the orchards were given little or no care, but were not actually abused. They usually yielded from \$25 to \$75 per acre net profit. A second grade of orchards better cultivated, pruned and perhaps sprayed, yielded from \$50 to \$100 per acre net profit over expenses. Skilful orchardists were making from \$100 to \$300 per acre, and a small percentage having special care and perhaps special natural advantages and a special class of customers, have made from \$400 to \$800 per acre clear of all expenses. \$400 per acre, therefore, is almost, if not quite, the minimum price for orchards of good varieties and well cared for, and many orchards could not be bought for twice the amount. It will be readily seen, therefore, that if we consider simply the permanent value of the land in orcharding and the value of the land for grazing purposes, the value is enormously in favour of the orchard land. If we consider the revenue derived from the orchards by practiced and skilled orchardists, compared with the revenue which can be derived from an equal investment in grazing, the investment is very much more in favour of orcharding. If we will consider the number of people which will occupy the land again we have the balance infinitely in favour of orcharding. It is, therefore, a very plain and elementary truth, that if a certain district of this country such as has been marked upon this map as No. 2 and No. 3, has great natural advantages for orcharding such as are not enjoyed by territory lying outside of this belt, it is an economical blunder of the worst sort to devote it, of all things, to grazing; an industry essential indeed, but subsidiary except where land is cheap and where it cannot for the present at least, be put to more remunerative purposes.

THE SOCIAL SIDE OF FRUIT GROWING.

But this is considering only the financial side of it. Socially, the blunder is perhaps worse. Primarily, the aim and object of society is not to accumulate wealth except simply as a means to an end. A much more important object is to bring about conditions such as will tend to the greatest degree of health, moral, spiritual and intellectual and by this the greatest happiness and consequently the highest development that our country is capable of. When you consider, therefore this side of orcharding we must acknowledge the very great value of it. It avoids the extreme isolation that we have in the case of grazing where so few people are occupied upon the land that social advantages cannot be enjoyed. The establishment of schools, churches, good roads, proper sanitary conditions and all the other features that come as the result of a model social organization, are physical impossibilities. On the other hand, the evils of overcrowding which we have in the case of manufacturing towns and cities, with all the evils of the apartment house, the flat the tenement slums and the sweat shops are entirely avoided. Orchardists are sufficiently numerous in any particular district to render all modern conveniences possible; but they have still so much of seclusion, that the virtues of home life can be cultivated while yet enjoying all the blessings of fresh air, outdoor exercise, sunshine in plenty and a physical condition of the very highest order. Not least among the advantages of orcharding is the fact that it strikes the happy medium between work for head and hand. It gives ample scope for a very varied type of intellectual labour in conjunction with all the physical powers, and so comes as near the ideal life as appears possible at the beginning of this 20th century.

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WHAT FRUIT GROWING HAS DONE FOR NIAGARA DISTRICT.

It would be rather a severe test to be asked to point to actual instances where these ideas have been carried into realization. Nevertheless, there are examples to which reference can be made with some degree of confidence. Niagara district in Ontario and parts of the Annapolis valley have been engaged in orcharding long enough to have developed something like normal conditions in this industry. And what do we find? The district from Hamilton to Niagara river that is given up to orcharding, has become so famous for its home possibilities that its value as orcharding land will soon likely be surpassed by its value for residence purposes for those, who, having accumulated as much of this world's goods as they care for, wish to retire to some ideal spot where they can enjoy the remainder of their life to the fullest extent. The convenient railway system cannot, of course, be attributed to this particular branch of industry. Nevertheless, it has helped to swell the dividends of the railroads beyond that of any other equal length of the system in the Dominion. The trolley cars may be set down directly to this industry and these give communication with the large cities at intervals of a few minutes at all times. Almost every house is supplied with a telephone which, together with the telegraph, place them in communication with the whole of the province. The water supply and the sanitary conditions will compare well with that of the model cities upon the continent; and in culture and intelligence a comparison would not be unfair with the best that is to be found in any group of population.

APPLES AND PROSPERITY.

Practically the same condition, somewhat modified, is to be found in the Annapolis valley, Nova Scotia, and it is a fair inference that if the fruit-growing capacity of the districts which I have outlined upon the Ontario map, were developed along lines corresponding with their natural advantages, a marvellous change would take place in the province which is even now regarded by its inhabitants as the premier province of the Dominion. Fruit growing has not been followed long enough in British Columbia to develop normal conditions there. Everything indicates that an equally desirable growth is taking place there which in the near future will make it a demonstration of what the fruit-growing industry can do to develop and maintain superior social and industrial conditions.

ANIMAL INDUSTRY FUNDAMENTAL.

I have made a comparison between orcharding and ranching. It may possibly be well to explain that I do this in no spirit of depreciation of animal husbandry. On the contrary, I have upon various occasions and do now warn orchardists, that animal husbandry is a permanent feature of orcharding under normal conditions. The fertility of the land cannot year after year and century after century be maintained, except upon the basis of a certain number of animals being kept for each acre cultivated, and I am, therefore, quite in sympathy with every movement for the improvement of our live stock and it gives me pleasure to say that the breeders of North Middlesex, and especially the Short Horned Breeders' Association, whose president is a member of this committee and is present with us today, has done a most valuable work in placing Canada in the very front in the work of developing this highest type of beef animal. The criticism that I would make is that we are not following economical lines in devoting a tract of country to an industry requiring cheap land, when nature has marked it out as specially fitted for an industry that will make land extremely valuable; that we are putting one or two men on fif-

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teen hundred acres where it is desirable and quite possible to put two or three families on every one hundred acres; that we are devoting the best of apple land to grazing when we have millions of acres now unoccupied that might most easily be first occupied for grazing purposes, while the people who will occupy this northwest grazing land are intensely interested that we should grow more and better apples where they can be grown, in order to supply them with this luscious fruit.

A BROADER CULTURE NEEDED.

Naturally the question arises how to bring about this consumption so devoutly to be wished. Speaking generally, the solution comes through a broader and better education of our farmer, and for that matter all citizens, and a wider diffusion of knowledge of our natural conditions and resources by the general public. There are, however, many partial remedies, many palliatives and expedients that can be recommended for immediate application. The process of education is slow and must be taken step by step.

CO-OPERATIVE FRUIT ASSOCIATIONS.

Nothing in the development of recent times in agriculture in Canada would do so much to improve the conditions of existing orchards and ensure the intelligent planting of more of them as a systematic campaign in favour of local co-operative fruit associations.

The first of these associations, in an imperfect form, was established in Ontario ten or twelve years ago. Since that time they have been growing slowly until today we have between thirty and forty in successful operation, three in Nova Scotia and about fifteen in British Columbia. It is needless to say that they have not all been successful. For its successful operation there should be fairly intelligent membership. Ignorant, jealous-minded, narrow-viewed and selfish men cannot co-operate. Even though we have all the virtues of the passive order, such as honesty, industry, suavity, frugality and temperance, it is not enough; in addition to this we must have an intelligent, active, public-spirited leader before we can secure a successful organization. Nevertheless, the movement is growing and the people are ready and willing to co-operate, but scarcely know how or where to begin.

CO-OPERATION COMPARATIVELY EASY IN APPLE SELLING.

It is interesting to note that the apple industry may be of very great assistance to the other agricultural occupations by being the means through which the co-operative spirit can be developed among Canadian farmers. If it did nothing more than this it would be well worth all the effort put into it.

The Forest Association.—Perhaps I cannot do better to convince you of the importance and value of this than give you the results attained by one or two of the associations and the effect which they have had upon the immediate neighbourhood. I referred at some length a few minutes ago to the agricultural conditions in North Middlesex. A few miles west of this is the town of Forest in the county of Lambton. Here the soil and climatic conditions, as you will readily understand, are practically identical with those of Middlesex; but it will be interesting to make a comparison between the income derived by forty farmers and their families on forty different farms devoted to general farming with orcharding as a specialty, and the income from the same quantity of land in the neighbourhood of Ailsa Craig devoted to grazing. The Forest Association owes its origin, and very largely its successful operation, to the intelligence and public spirit of Mr. D. Johnson, a farmer near Forest who has an orchard of twenty-five acres. By his skill and tact he has held this organization

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together through good years and bad years, until I believe it has reached the point where it can go on and prosper without him. This is the ideal condition of things. The very essence of co-operation is to help people to help themselves. We should not delay organization in any particular neighbourhood until every man is fully educated up to the point where he could be a leader. The organization should begin as soon as possible and the work afterwards would be the means of developing the members. Thus the movement in a short time would not depend upon one or two in a neighbourhood. It would as far as intelligence, tact and experience is concerned soon be wholly independent of any particular individual. The Forest Organization had no particular advantages. The orchards, when the organization first began, were neither better nor worse than are thousands of orchards existing in Ontario. The material out of which an organization could be made was not, I believe, above the average, and for this reason the results are particularly gratifying.

As you are aware, in the year 1907, there were serious losses experienced by apple operators and inexperienced apple growers in the matter of selling their stock, and upon the whole it is doubtful whether the average grower realized more than one dollar a barrel for apples. Do not be shocked at this, because I can assure you that even if apples never realized more than a dollar a barrel on the trees, they would still pay better than any other farm product, except fruit commonly grown on Canadian farms. Nevertheless, by their better organization they secured for their patrons fully fifty cents a barrel above the average obtained by other growers in the same county. In the past year they have secured over \$2 per barrel for the seven or eight thousand barrels that they have handled; but even the extra price which they have secured for their members is a small part of the benefits which have accrued from co-operation. This large total of seven thousand barrels would not have been secured had it not been for the moral suasion of the organization, which induced the members to spray, prune and take care of their orchards properly.

CO-OPERATION IMPROVES QUALITY AND QUANTITY.

Indeed, the largest gain accruing as the result of co-operation is, I think, in this case, the increased quantity of crop and the superior quality. Upon this point particularly I wish to dwell. Having immediate charge of the enforcement of the Fruit Marks Act, I naturally attach considerable value to any aids which can be summoned to assist in the work, and I have no hesitation in saying that co-operative associations are worth far more than inspectors beyond a limited number. Indeed, there would be little use for inspectors at all in the apple business if the growers were all as thoroughly organized as the Forest Association is. Our inspectors made many examinations of the pack going out from the Forest Association and in no case did they report them wrong. This is direct evidence of the excellence of their pack. The indirect evidence comes from letters to the Fruit Division from private individuals who have purchased this stock and who, while condemning Ontario apples generally, do not fail to make an exception of the pack of the co-operative associations where they have had an opportunity of sampling them.

Chatham (Kent Co.) Association.—I should also like to direct attention to the Chatham Association farther south in the county of Kent. This is one of the older associations where the organization is thoroughly established and where the good work has been apparent for many years. For reasons which I have urged elsewhere, the apple industry was in a precarious condition in the county of Kent a few years ago. The growers, individually, were unable to cope with the difficulties that confronted them. They did not appreciate the changes which are so rapidly taking place in our Canadian life. Many of the orchardists in Kent county, I regret to say, are still doubtful whether orcharding pays or not.

At this point an organization was established in Chatham with Mr. W. D. A. Ross as manager. Mr. Ross, unlike Mr. Johnson, of Forest, is not a large fruit grower.

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In fact, his main business is altogether in another line, though his interests are identical with the fruit-growers' interests. With more than ordinary intelligence, with very great patience and with a public spirit that deserves much more recognition than it is likely to get, he has held this association together until it now numbers nearly seventy members. The output runs up into about twenty carloads of green fruit, one car of evaporated waste and about a thousand cases of evaporated apples. The returns this year have probably yielded within a few cents of \$2 per barrel on all apples handled. This association comes well south into the tender fruit district and they are working at a disadvantage by not having a proper cold storage system. But notwithstanding the lack of a cold storage plant they have succeeded in giving general satisfaction even with early and tender fruit and have so managed affairs as to have very few losses; very little fruit going to waste.

THE EVAPORATOR SAVES FRUIT AND IMPROVES THE GRADE.

In order to ship a higher grade of apple, they have put in an evaporating plant which has been increased in size this year, and will be doubled next year. Thus the evaporator gives them a chance to discard all defective fruit and fruit too mature for shipping. This material is just in the finest condition for evaporated stock and in consequence they are able to realize almost green fruit prices for this second grade stock, which would under other circumstances be waste stock. I direct particular attention to this feature of the organization. It is very true that only three or four of the co-operative associations have established evaporators in connection with their business. This is because the Canadians are so unfamiliar with co-operation that they cannot be readily induced like the Danish farmers to put money into co-operative ventures of this sort. But the idea is growing and I confidently expect as the organizations become better known that an evaporating plant will be considered an essential feature of every apple association. It is not too much to say that if the waste apples that might with reasonable care be utilized for evaporating stock were saved, the revenue from the Canadian orchard could be nearly doubled. The Chatham Association people were able to increase their returns by one-third through the evaporator. But still further improvement in this respect will take place in the future. The plant is not yet large enough to take care promptly of all the stock that is offered, and notwithstanding the splendid arrangements of last year the hot weather spoiled a large quantity of apples that would have been good evaporated stock.

Norfolk County Association.—Another association that does most excellent work is located at Simcoe, Norfolk county. In none of the associations is the result of individual effort more noticeable than here. The manager, Mr. James Johnston, is the life and soul of the association. Without him it is doubtful whether the association would have been formed, and it is certain that it would not have been carried on so vigorously nor extended its operations over so large an area. They are engaged wholly on barrelled apples and have secured some phenomenal prices as the result of careful grading and excellent packing.

CO-OPERATION ENCOURAGES SPRAYING.

Perhaps the feature of Mr. Johnston's work that stands out most markedly is the value of a co-operative organization for educational purposes. Simcoe is in District No. 1, where we have in a degree all the effects of an early and long season with a comparatively warm summer. The codling moth is perfectly at home here. In all probability the larvæ are developed continuously throughout the summer. Apple scab is very much in evidence and, generally, all orchard pests find a congenial

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habitat. As a result, apple orchards that are not sprayed are usually almost unmarketable. Mr. Johnston has entered upon a vigorous crusade in favour of spraying and better care of orchards generally among his patrons, and has succeeded so well that the Simcoe Association ship probably one-half of all the No. 1 apples leaving Norfolk, although the number of orchards controlled by them is an exceedingly small fraction of the total number of apple trees in the county. The result has been, that not only has the cooking and dessert quality of the apples materially increased but even the keeping qualities are much better. It will thus be seen that the advantages here are not of that selfish order that accrue to one individual or class of individuals. The consuming public as well as the producers are deriving a great benefit from this association.

The St. Catharines Association.—The largest association is that at St. Catharines. This association has been particularly fortunate in having at its head a number of energetic and public spirited men who have succeeded most admirably in organizing the small growers that have always made fruit growing a specialty in this district. The work was perhaps all the harder from the fact that these growers have been able to make a good living working individually. It was necessary to overcome the disinclination that such men have of changing a condition of things that is not altogether bad for something yet untried. The association had to work against several fruit dealers who made a business of buying fruit locally and supplying special customers.

The present manager, Mr. Robert Thompson, has been connected with the association since its inception in a modified form in 1898. It does not at all detract from the good work done by others to say that to him belongs the credit of making this the largest co-operative fruit association in the Dominion, and one of the best managed. The membership is now three hundred. The turnover approaches the hundred thousand dollar mark. The bad debts are also a vanishing quantity and not a cent has been misappropriated. The financial benefits that can be definitely calculated reach at least 20 per cent of the turnover of each member and in the aggregate amount to thousands of dollars. But the benefits are not confined to the members. The general public directly and indirectly have benefited probably quite as much as the members, and all are willing to concede these extraordinary results to the unselfish and unremitting efforts of the manager. Mr. Thompson, in the tangible form of this association, has founded a claim to a place among the most honoured of Canadian citizens.

The growth of the association was at first fairly slow, and it was not until the advantages of co-operation were many times demonstrated that they succeeded in securing the almost universal confidence of the growers. Even yet the association has to contend with the subtle ways of the selling agents, who are continually endeavouring to poison the minds of the co-operative patrons and who do not scruple to misrepresent the quality of their own goods as well as disparage the advantages of dealing through the association. These agents do not hesitate even to attack the motives of the co-operative leaders, and nothing but the most straightforward and democratic management could have succeeded in keeping the organization together against the opposition of powerful manufacturing combinations and the sinister insinuations of their agents.

FRUIT GROWERS, ORGANIZED VS. BASKET MAKERS.

The season of 1907 demonstrated most satisfactorily the advantages of thorough organization of the fruit growers. The association wished to place a large order for baskets. The basket makers asked \$33 per thousand for this particular size. This was considered too high a price, and all the available factories were approached with a

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view of getting a lower figure; but the same price was quoted by each. It became evident that the basket makers had an 'understanding' with regard to price. The result was that the co-operative association placed an order in the United States, and although they were obliged to pay a heavy duty upon a price higher than was actually paid for the goods, they succeeded in securing their baskets at a reduction of nearly \$8 per thousand. This was evidently the first time the basket manufacturers were opposed to an organization as powerful as their own and they appreciated that a new condition of things had arisen. They became amenable to the power conferred by co-operation, and as a consequence the St. Catharines Association will this year place an order for a million baskets with Canadian basket makers at a saving of about \$4 per thousand over the price that was originally asked by the basket makers and, of course, at a very large saving over the price that the basket makers could afford to sell to individual growers. The saving on this one item alone would, in all probability, pay the running expenses of the association.

To show the extent to which this association is furnishing its members with supplies, I submit the following schedule of the supplies handled by the St. Catharines Cold Storage Company during the season of 1908.

| | |
|---|-------------|
| 550,000 m grape baskets.. . . . | \$17,600 00 |
| 300,000 m 11 qt. baskets.. . . . | 12,000 00 |
| 7,000 berry crates.. . . . | 140 00 |
| 350,000 " boxes.. . . . | 1,050 00 |
| 6,000 apple boxes.. . . . | 1,000 00 |
| 3,000 pear boxes.. . . . | 450 00 |
| 1,500 pkgs. basket fasteners.. . . . | 210 00 |
| 3 large spray pumps.. . . . | 130 00 |
| 55 hand spray pumps and accessories.. . . . | 1,100 00 |
| 2,000 ft of rubber hose.. . . . | 200 00 |
| 5,000 lbs. arsenate of lead.. . . . | 700 00 |
| 250 " paris green.. . . . | 70 00 |
| 10,000 " blue stone.. . . . | 575 00 |
| 140,000 " sulphur No. 1 and sublimed | 2,100.00 |
| 8,000 " muriate of potash | 180.00 |
| 1,000 " nitrate of soda | 27.00 |
| 60,000 " bone meal | 840.00 |
| 1,000 " binder twine | 100.00 |
| 300 " grape twine | 50.00 |
| 1,200 bush lime | 240.00 |
| 33 bbls. prepared lime and sulphur | 396.00 |

By Mr. Currie (Simcoe):

Q. What is the price of the sulphur and for what is it used?

A. It is obtained for \$1.33 per hundred lbs. in carload lots. The individual farmer going to buy it in small quantities would probably pay four to five cents a pound. Sulphur has now become a very important item in the list of articles used on the fruit farm. Combined with lime it forms the lime and sulphur mixture that is a specific for nearly all the insect and fungus pests that can be attacked in a dormant condition. It is applied just before the leaves appear in the spring. Another very large item is commercial fertilizers. This is likely to be a larger item still in the near future.

In few articles is the chance for deception greater than in commercial fertilizers. Only the expert knows whether value is being received in the case of commercial fertilizers and tens of thousands of dollars are being lost every year to far-

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mers through the frauds perpetrated in this article. The value of co-operative associations is demonstrated here. A few weeks ago the manager of this association was placing a very large order for a fertilizer. Prices were submitted by the representatives of different selling firms. The manager asked for samples of the material. These samples were submitted to the Dominion analyst and on the results obtained from him the order was given at a probable gain to the association of many hundreds of dollars. This would have been an impossibility if the fruit growers had worked individually. They would not and could not have gone to the expense, individually, of having an analysis made, and even if that were possible they could not have gone to the expense of paying the extra cost of seeing that the delivered article agreed with the sample.

MECHANICS AND FRUIT GROWING.

One of the features in the history of the co-operative association at St. Catharines deserves special mention. St. Catharines, owing to the power that is developed by the Welland canal, is the centre of a large manufacturing district. Many of the labourers in the mills and factories in the neighbourhood have noted the successes attending the efforts of the fruit growers. A large number of them have extended their fruit growing experiments from the gardens about their cottages, by purchasing tracts of land in the immediate neighbourhood of the factories and planting these to fruit. Later they have left the factory and depend now solely upon fruit growing as an occupation. There is no better evidence that fruit growing in these large areas suited by soil and climatic conditions, is likely to bring back to the land a great many men who would otherwise have spent their lives at the less remunerative and unhealthy work of a factory hand. Naturally this has had an effect upon the price of land, which has almost doubled in the neighbourhood of St. Catharines. Of course, this will not be a matter of regret to those who have tracts of land for sale, but economically it illustrates the widespread influence of the co-operative movement. In this case the land owners have, perhaps, never appreciated the true source of the increased value of their lands. Even the merchants would be at a loss to account for the prosperity in which they are sharing. The transportation companies appreciate the increased business and are now giving much better facilities than were offered in the old days of haphazard shipments by individuals.

CO-OPERATION AND COLD STORAGE.

The St. Catharines Association have also demonstrated most conclusively the value of cold storage in connection with the fruit-growing industry. They have a concrete insulated cold storage warehouse with mechanical refrigeration which is used almost exclusively as an adjunct to fruit growing. They make no attempt to hold ordinary fruit products out of season. They use it simply to keep fruit in good order which the conditions of the market or transportation facilities make it necessary to hold for a few days. It is used very largely, too, for the purpose of holding over fruit from Saturday to meet Monday's market in the large cities and towns of Ontario. It is used also in holding fruit until it can be utilized by the local canning factories. Of course, the pre-cooling of fruit intended for long shipments, is a feature that is likely to be used in the future to a greater extent than in the past, and when properly done will probably ensure the safe shipment of the very best tender fruits to all parts of the Northwest. Any one who is anxious to understand the advantages of co-operation cannot do better than visit the St. Catharines Association and see in the thousand and one ways how great a boon this movement is when properly applied.

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The managers of these successful co-operative associations are true apostles of a code of business morals all too rare in the English-speaking world. To achieve such results as they have, something more than 'common honesty' was required. Had they adopted the ordinary 'business is business' standard of conscience that has created our 'merchant princes' and 'Napoleons of finance,' they might have appropriated, without a word of reproach from others, the large surpluses which have been distributed by co-operative methods among those who earned them. Consciously or unconsciously but literally they have practiced the golden rule. Too often I think many of us have been content to admire it on occasion and commend it to others. They have literally obeyed the injunction: 'The husbandman that laboreth shall be the first partaker of the fruits.' The philanthropy of the modern business world would be more considerable or at least more cautious. It would 'muzzle the ox that treadeth out the corn,' for fear of a surfeit.

That these men have done this (with us) pioneer work, and have done it so successfully without the thought of reward other than that of a good conscience, seems a partial realization of the prophetic vision:

'When all mine and thine shall be ours, and no more shall man crave for riches that serve for nothing but to fetter a friend for a slave.'

FAILURES AND PARTIAL FAILURES.

A fair degree of success has been attained by the larger number of co-operative associations so far organized. A few have failed outright. A study of the causes of the partial or total failure of these few associations is interesting. In most of the cases the causes of failure are in the people themselves who form the association. Outside influences against co-operation are always present in a varying degree but where the people themselves possess a fair degree of intelligence and public spirit, outside influences are powerless. It is not expedient to delay co-operative organization until all the people, or even the greater portion of them, are mentally and morally constituted as we would wish them to be.

A false economy accounts for many failures in farmers' combinations. For instance, the first manager of an association now dwindling was a most capable man, who asked something over a thousand dollars for his services as manager during the fruit season, and he was well worth it. After one successful season, the economically minded in the association favoured the hiring of a manager some three hundred dollars cheaper. The saving of three hundred dollars in salary resulted in a probable loss of three or four times that amount in a less successful business management. This, however, could only be ascertained by an estimate, and therefore could not be brought home to those who were responsible for this false economy in a manner definite enough to make them change their methods.

In another case two of the most extensive growers, prominent in the movement till harvesting time, were seduced from the association by a higher price for their apples than they were sure of obtaining through the association. The higher price was given by an agent for a large English buying firm who hoped in this way to introduce discord into the association and keep this particular district a preserve for himself and his firm. The desertion of these two members practically brought about this result: the few who remained were not able to do much better in price than some outsiders. Next year no association was possible.

In still another case, the manager was suspected of accepting a personal commission, without the knowledge of the association, for all apples sent to a certain firm of commission men. The circumstances certainly lent some colour to this allegation. True or false, however, the patrons lost confidence in the manager. If the association had been formed of the best material, the charge would have been investi-

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gated, the manager either exonerated or discharged, and work would have gone on with little or no interruption. As a matter of fact nothing was said publicly, but a great deal of gossip floated around privately and member after member dropped out until the association dissolved.

LEADERS ARE LACKING.

The petty jealousies of neighbours, the foolish reticence which some people think necessary in business matters, the suspicious attitude often mistaken for caution, together with weakness, stupidity and downright selfishness, make it difficult to secure any kind of cohesion in some neighbourhoods; but speaking generally it may be said that the people, though not as well prepared for co-operation as they should be, are ready for it, but the leaders are lacking. In many places, however, the leaders exist though in an embryonic condition, and all that is needed is a little assistance in organizing that will give an opportunity for these men to assume responsibility, when many of them would develop into excellent co-operative managers. The conditions in Ontario and in the Annapolis valley, Nova Scotia, are hopeful; in British Columbia the prospects look even brighter for the co-operative movement. The country is new there and fruit growing is being taken up by a class of men more than ordinarily intelligent. Educated men and men who have made a success in other lines of business, are taking up fruit growing in this province, with the result that the co-operative movement has a trained class of men for its basis, rendering unnecessary the preliminary educative process that is so burdensome in some parts of the older provinces.

CO-OPERATION SHOULD BE ENCOURAGED

I cannot too strongly commend this movement to this committee, and I sincerely trust that some way may be devised whereby the organization of these associations may go on more rapidly in the future than they have in the past. I have endeavoured to show the value of them, and I have also shown, I think, the many opportunities there are for more of them being established. The whole district from Kingston to Goderich in Ontario, all the fruit growing districts in British Columbia and the fruit growing district of Nova Scotia present opportunities for hundreds of these fruit associations.

It is the duty of everyone who has the shaping of public opinion to do his utmost to bring about these organizations. They differ from the ordinary trade combine in this, that while they possess all the economic value which the manufacturing and trade organizations have, they are practically incapable of working the evils that are sometimes the accompaniment of manufacturing and trade organizations. If you will recount the benefits which I have mentioned to you of these co-operations, you will find that none of these are at the expense of any other class of citizen. Even in the case which I cited where the basket manufacturers were obliged to reduce their price, it was in the end no real loss to the manufacturers, because when the basket manufacturers had accommodated themselves to the conditions of the co-operative associations, they found they could dispense with a very large amount of agents' fees; consequently, they are really getting more for their baskets now than they got before the co-operative associations were formed, although the fruit growers are getting their baskets so much cheaper and the consuming public are getting the benefits of these through better and cheaper fruit. This is equally true with regard to commercial fertilizers; but most of the benefits which I have mentioned are entirely apart from even this apparent diminution of profits accruing to any other class of the community. They are true economical gains. The better education that results in better fruit and more of it for the same investment of capital and skill; the lessening in the cost of operations as the result of doing it upon a large scale and with better imple-

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ments, are all actual creations. As the result of co-operative associations, something exists now that never would have existed except for their instrumentality.

THE ORGANIZATION OF FRUIT GROWERS BENEFITS ALL CLASSES.

For this reason I make a plea that dwellers in the cities, as well as the manufacturers and the merchants everywhere, have a distinct interest in this co-operative movement among the farmers. It detracts from no one's profits and it adds to every one's income and comfort. Not a citizen of any sort but what gets his share of the benefit, and therefore it is a movement peculiarly fitted for a government propaganda.

EFFECT OF SOIL AND CLIMATE ON THE FLAVOUR OF APPLES.

By Mr. McIntyre (Strathcona):

Q. Reverting to the matter of flavour in apples, do climate conditions have anything to do with flavour of apples?

A. I think so, most decidedly.

Q. Rightly or wrongly in western Canada we find that many of the apples that come from British Columbia and from Oregon and Washington, particularly from the coast, where the temperature is equable, do not have the flavour of the apples that come from the eastern provinces of Canada. Whether or not that is due to the climate is something upon which I would like to have your opinion?

A. Certain varieties are adapted to certain localities and are not so well flavoured if grown elsewhere. But apart from this the climate and, to a certain extent, the soil have a decided effect upon any variety. The apples, for instance, grown in the warmer and more moist parts of British Columbia are larger and coarser in texture compared with the apples grown where the rainfall is normal. The apples there are not so crisp nor quite so acid and, generally, not so highly flavoured. The smaller and better flavoured apples in British Columbia come from the irrigated districts or from the districts having a moderate rainfall. In Ontario where apples are grown under various conditions, the quality varies. If the soil is fertile and the trees are pruned and thinned so as to get few on a tree, the quality is likely to be good.

By Mr. Sealey:

Q. Do I understand that the suggestion to have a survey of the various sections of the Dominion is largely based on the view that the matter of elevation has some bearing on the matter?

A. Elevation and latitude and the proximity of large bodies of water

By Mr. Currie (Simcoe):

Q. What about the soil?

A. The soil is a feature but its peculiarities can be corrected to a very large extent. This is not the case with climatic conditions.

By Mr. Sealey:

Q. The matter of education seems to be a great thing at the present time. I am sure we have all listened with great interest to what has been said and been benefited by the address. The suggestion of a complete orchard survey if taken up now would, I suppose, take a number of years to develop?

A. A helpful tentative map could be sketched immediately. It would take some time to perfect it in detail.

By Mr. Sharpe (North Ontario):

Q. What are the chief varieties of winter apples?

A. The Spy, Baldwin, Golden Russet, Greening, Ribston, Blenheim, King, Ben Davis and Stark.

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Q. These are the ones you would recommend?

A. Yes, these are the money making varieties.

By Mr. Armstrong:

Q. What new varieties of winter apples do you recommend?

A. There are few varieties that can be confidently recommended. The Milwaukee for District 4 is favourably spoken of. For commercial orchards we can recommend only the old varieties. Mr. Macoun, horticulturist, at the Experimental Farm, has developed a number of seedlings, some of which promise to be of great merit especially in the colder portions of Canada.

Q. Has the government not experimented in different parts of the province of Ontario as to the different varieties?

A. The Dominion Government has not, but the Provincial Government in connection with the fruit growers' association have had a number of experiment stations where this work is carried on. The Experimental Farm at Ottawa has a climate too severe for the apples that would be profitable elsewhere. The Provincial Government has now an experimental farm at Jordon Station under the superintendence of Mr. H. S. Peart, where experiments of this nature will also be made.

By Mr. Blain:

Q. How far north in Ontario can winter apples be successfully grown?

A. No hard and fast line can be drawn, but in a general way it may be said that if a line be drawn from Kingston to Sharbot Lake then west to Georgian Bay, all the counties south will grow winter apples.

Q. Is the territory bordering on the Georgian Bay and Lake Huron well suited for fruit growing?

A. Yes, for winter apples there could not be better. Many favoured localities in this district are growing plums also most successfully.

By Mr. Nantel:

Q. You spoke of the spray. What kind of spray do you recommend?

A. The Bordeaux mixture composed of sulphate of copper and lime is the most useful.

By Mr. Currie (Simcoe):

Q. You do not approve of the dust spray?

A. No, it is not satisfactory with us.

By Mr. Armstrong:

Q. What is the department doing to urge the establishment of those co-operative associations that you spoke of?

A. A bulletin (No. 18) has been distributed. Several of the fruit division staff have spoken at fruit meetings on the subject. I find that I have spoken on this subject at eight meetings this year.

Q. I should have thought that would have been one of the most important matters for the department to take up?

A. Nothing at the present moment is of more importance to the fruit industry. It includes and implies nearly every other reform that is pressing. I can assure you we are alive to its importance.

The CHAIRMAN.—I am sure we have appreciated the address Mr. McNeill has given, and I hope that the people will get this information and study it.

Having read over the foregoing transcripts of my evidence, I certify the same to be correct.

A. MCNEILL,
Chief of Fruit Division.

PART II.

IMMIGRATION AND COLONIZATION

IMMIGRATION.

HOUSE OF COMMONS,

COMMITTEE ROOM No. 34,

WEDNESDAY, April 1, 1909.

The Select Standing Committee on Agriculture and Colonization met at 11 o'clock a.m., Mr. D. A. Gordon (Kent), presiding.

The CHAIRMAN.—If the Committee comes to order we will hear Mr. Scott's report on the question of immigration.

Mr. W. D. Scott, Superintendent of Immigration, called and examined:—

Mr. SCOTT.—That is not exactly what I was asked for. I was directed to appear before the Committee for examination upon matters pertaining to immigration, and to produce all the correspondence with Mr. N. B. Miller, late Immigration Location Agent for Lennox, from the time of his appointment up to the time of his dismissal; also information in regard to other men who occupy like positions and if any defaulters among them, who they are; a statement showing the number of persons who left Canada for the United States during the past year and were turned back; a statement showing the number of persons who left Canada during the last fiscal year. I may say that we do not collect any statistics of people leaving Canada. We only collect statistics of those coming into the country, and I have the file here along with the correspondence of Mr. Nathan B. Miller.

GOVERNMENT EMPLOYMENT AGENTS.

By Mr. Wilson (Lennox and Addington):

Q. We will take that first. You have the reports, I suppose?

A. I have the file here. I have all the official papers in connection with it except, of course, the claims that he makes. They are accounts and do not apply to this file.

Q. You have a copy of the Spink's letter?

A. Yes.

Q. Would you read that first. You need not read any more than the 5th and 7th paragraphs if you care. That will give us the particulars I want.

A. On January 15, 1907, I issued the following circular:—‘This department has decided to appoint a number of Canadian government employment agents at different points, to secure positions as domestic servants or farm help for British immigrants, and you have been recommended as a suitable party to act in your vicinity. Booking agents in the United Kingdom are being notified of the action about to be taken, will be furnished with a list of names and addresses of agents appointed and requested to offer the services of employment agents to those desiring to avail themselves of such assistance. Every immigrant wishing to be placed by our agents will be furnished with a card of introduction to the agent at the point to which he is proceeding, and a letter of advice describing immigrant, his past occupations and style of work desired, will be mailed to Canadian government employment agent

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some weeks in advance of the sailing of immigrant, which will allow the agent time to select a suitable situation. The Department intends to allow agents a commission of \$2 per head on every man, woman and child placed at farm work, and on every woman placed at domestic service. This commission will be payable only on immigrants directed to employment agents by booking agents in the United Kingdom; and to secure such commission, agent must send card of introduction and letter of advice here, together with another form of which a supply will be sent to those appointed. Agents will be allowed to expend in advertising in the local press to secure a list of help wanted an amount not exceeding \$10. With the exception of commissions and advertising mentioned the department will be responsible for no expense incurred by its agents. Immediately upon receipt of this letter kindly telegraph me stating whether or not you are willing to accept the position. If you accept, full instructions will be sent you later.' Mr. Miller telegraphed me on 4th February, 'Will accept the appointment of employment agent.'

Q. Is there not a clause which states that 'You must not take or attempt to secure situations for men or women at anything outside of farm work or domestic service?'

A. On January 15 I issued another circular.

Q. January of what year?

A. 1907. The first circular was on January 15 too. I addressed this circular to Nathan B. Miller: 'Your appointment as Canadian government employment agent is to commence on February 15, 1907. Your duties will be to secure employment in your vicinity for newly arrived immigrants from the United Kingdom desiring positions on farms or as domestic servants, and for this service you will be paid \$2 for each person so placed. In placing families you will be allowed the commission on the wife and children as well as on the husband. No commission will be allowed on immigrants placed in any other occupations than as farm help and domestics. The department is notifying all booking agents in the United Kingdom of your appointment, and as soon as an immigrant applies to them for a ticket to your vicinity he or she will be told your name and address, and if the party wishes to avail himself or herself of your services, the booking agent will immediately write to you on a form similar to the one enclosed. The information contained thereon will enable you to judge of about the time such immigrant will arrive, and also enable you to form an opinion as to the most suitable position available. Upon arrival immigrant will present a card of introduction from the booking agent (sample enclosed) which will identify the party as the one regarding whom you have received correspondence. After placing the party at one of the prescribed occupations you will send me the card of introduction together with the form of advice received by you from the booking agent, and your statement as to where the immigrant was placed (book of forms for this purpose under separate cover) and you will receive your commission in the course of about three weeks. To obtain information as to those who require help, you will be allowed to expend in advertising in the local press a sum not exceeding \$10. Upon presentation of accounts in triplicate certified as correct by yourself, the department will pay direct to the paper or papers doing advertising. Underneath is a sample of an advertisement which with insertion of name and address will answer the purpose. The department will be responsible for no expense incurred by you with the exception of the \$2 per capita commission and the maximum \$10 for advertising. In the book sent under separate cover it is important that you always fill in the agents stub as you have then a complete record of each transaction which may be of value in the event of any dispute between the employer and employee or between this department and yourself. You will be expected to act at all times in the best interests of the immigrants and in the event of disputes between them and their employers give them such advice as your experience would suggest. If there is any point in connection with your duties upon which you are not clear I will be pleased to give all information possible. No postage is required on letters addressed to me.'

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Q. Have you got the circular dated February 1, 1908? That is the one furnished to me.

A. I am going back a year before that.

Q. You have not read the clause yet in the circular of February 1, 1908. I want to say that he was not entitled to payment for locating on anything but farms and that he was not allowed to interfere at all in getting employment for any other class but farm hands and domestics.

A. Certainly not.

Q. I want you to turn to Mr. Miller's report number 8328. That is the report regarding Mr. William Spinks wife and children.

A. I have not that on this file. I have only the general correspondence.

Q. This is what he reports:—'May 29, 1907. This is to certify that I have this day placed Mr. William Spinks, wife and children, Alick, Walter, George, Albert, Mabel and Nellie, who landed at the port of Quebec on the 25th day of May, 1907, on the steamship *Canada* as a farm labourer with Mr. C. Dennison, of Napanee, province of Ontario, to work on his farm. The following are the terms of engagement:—\$25 per month for five months.' Now you wrote a letter on February 26, 1908, to Mr. Dennison. Would you tell us what caused you to write that letter?

A. When we first started using these employment agents the thing was an entirely new departure and I wanted to ascertain the degree of satisfaction that those immigrants who were being placed on farms were giving and I issued a circular. For instance here is a sample. The circular reads:—'It has been reported to me that so and so an immigrant who recently arrived in Canada engaged with you as a farm labourer. I would be pleased if you would let me know if such is the case, stating if he is still with you, what kind of satisfaction he is giving, and what wages he is receiving. I desire this information in order to form a fair opinion as to the satisfaction immigrants are giving to Ontario farmers. Please reply on space underneath and use enclosed envelope upon which no postage is required in mailing your answer to me.'

Q. Well had you any suspicion that any of the agents were making reports to you that were not true?

A. None at all.

Q. Would you mind reading this letter which you got from Mr. Dennison. You might read your own letter and then the answer.

A. Mr. Dennison of Napanee was sent one of those circular letters in regard to William Spinks, wife and seven children on February 26. On February 29, 1908, he replied to this effect:—'I received this note from you to-day. I am in the grocery business and not a farmer. In regard to William Spinks and family I just happened to meet them the day he arrived here with his family and helped him to find a house to move in. He is a carpenter by trade. He is a clever fellow and is doing well. The older boys are at work learning trades and the smaller ones are going to school. He and family like it here very much and from what I have heard him say he has no desire to go back to England. In my opinion such families as Mr. Spinks' are welcome here.'

Q. After you received that answer from Mr. Dennison what did you do? That was nine or ten months after the report sent in by Miller was it not?

A. On March 25, 1908, I wrote to Mr. Miller and said: 'I beg to inform you that unless you can show reason why I should not do so the following commissions already paid to you will for the reasons set forth in each case be deducted from your future earnings.' I gave him a list of the people that had not been placed. William Spinks is amongst those. The reason given to Mr. Miller for not allowing the claims was that they were not farming.

Q. What reason did Mr. Miller give you at the time for reporting them?

A. I could not say I am sure.

Q. Did he not write to you?

A. I do not see any reply to that.

Q. It seems to me very strange that you should have called his attention to that. Now I know something about this case because I talked to Mr. Spinks myself and to Mr. Dennison and I discussed this question on the public platform at the elections and I have not been served with a writ or anything of that kind since. Mr. Spinks an Englishman who landed in this country, was met by Mr. Dennison who is a grocer in our town. Spinks went to him and asked if he could assist him in getting a house. Mr. Dennison who is a good natured man, said yes, and he did get him a house. Mr. Dennison is a grocer and not a farmer. The way it looked to me is this that Mr. Miller found Mr. Spinks there with his wife and seven children and that he thought this was an opportunity for him to make \$18 easily and he reported as having located this man when he had no more to do with locating him than you had.

A. That is quite true and we notified Mr. Miller on March 25 that this was to be deducted.

Q. You notice that this is a false return?

A. It is.

Q. It is criminal?

A. I do not know. I am not a lawyer.

Q. Did you report the man Waugh to the Justice Department?

A. Yes.

Q. Do you know what action they took?

A. Yes.

Q. What did they do?

A. The man was arrested, I think, but was allowed out on suspended sentence.

Q. You have not reported Mr. Miller?

A. His account is square today.

By Mr. Monk:

Q. Has this commission been revoked?

A. Yes.

Q. What did it cost us?

A. Nothing at all. As a matter of fact I think we owe him something to-day.

Q. Did you get the \$18 back?

A. Yes.

Q. Then he was employed after the fraud was discovered?

A. Although our circulars are perfectly plain a lot of those men who are not business men do not understand the conditions very well and there were some who sent in claims that were not right. Where we discovered them we deducted them.

Q. Where is the proof that his commission has been revoked?

A. On 16th February I wrote to Mr. Miller:—‘I beg to inform you that it has been decided to dispense with your services as Canadian government employment agent from this date. Your dismissal is due to your action in sending in commission claims numbers 1930 and 8328, claiming to have placed certain immigrants as farm labourers with G. Deshene and C. Dennison, whereas these parties were respectively foremen for the Grand Trunk Railway and grocery man. Kindly return to me the book of commission claims and other departmental stationery now in your possession.’

Q. When did the fraud occur?

A. It was not fraud in my opinion. I think it was a mistake. He did not understand the conditions and we notified him that these claims would be deducted. We have open accounts with every one of those agents.

Q. It takes place in May, 1907, and you notify them in February, 1909.

A. Yes.

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Q. When did you get the money back?

A. Some time this year.

Q. In cash?

A. Yes, I think it was in cash.

Q. Kindly give the date.

A. I have not the date on this file but I know it was refunded.

By Mr. Wilson (Lennox and Addington):

Q. Well, I will have something to say about this case again. Here is another case. Mr. Arthur Wood and wife who landed at the port of Halifax on the 26th day of April, 1907, on the steamship *Ottawa*, and Mr. Miller's claim states that he placed them as a farm labourer and domestic with Mr. G. Deshene of Napanee, Province of Ontario, to work on his farm. The following are the terms of engagement:—Seven months at \$25 per month. Commission claimed, \$4. Signed Nathan B. Miller. Kindly read Mr. Deshane's letter in answer.

A. On 3rd February of last year I wrote to Deschene of Napanee. I said, 'It has been reported to me that Arthur Wood and wife, an immigrant who arrived in Canada some time ago, engaged with you as a farm labourer. I would be pleased if you would let me know if such is the case stating he is still with you, what kind of satisfaction he is giving, and what wages he is receiving. I desire this information in order to form a fair opinion as to the satisfaction immigrants are giving to Ontario farmers.' Mr. Deschene in reply to that wrote:—'The person who reported to you that Mr. and Mrs. Arthur Wood came out here from England as immigrants notified you wrongly. They came here last May but came out on their own hook. That is, paid their own way independent of everybody. When they landed here at the depot the night operator, Mr. Giroux, informed him that I, foreman of the Grand Trunk Railway, was in need of a man and so he came to me and I hired him and he has been in my service ever since with the exception of a few months, and I find him to be an honest, upright and industrious man, and he is not working for a farmer nor has he been.'

Q. Now, that man is a section boss on the Grand Trunk in Napanee, and Mr. Miller had no more to do with getting that man a job than you had.

A. No.

Q. Then his instructions were perfectly clear with reference to that, that he was only to get employment with farmers for farm labourers and domestic servants?

A. That is correct.

Q. Do you think he did not understand that?

A. I cannot say I am sure.

Q. Now that is a clear case in my judgment of where he thought he could make \$4 more—\$18 and \$4 is \$22. Then there is another case here of Alfred Sandell and wife and children, four children. Miller certifies that they landed at Quebec on the 29th of June, 1907, on the steamship *Canada* and that he had placed them as a farm labourer and domestic with Mr. M. Jones of Napanee post office, province of Ontario, to work on his farm. The following are the terms of engagement:—\$20 per month. Commission claimed \$12. Would you read Mr. Jones' answer to that letter you wrote to him.

A. I sent the same circular letter to Jones of Napanee and he replied:—'You have been misinformed. I know nothing of the above named persons.'

Q. \$12 for that. Was that paid?

A. I cannot say I am sure.

Q. Perhaps you can find if it has not been paid. There were a lot of those paid. I know Mr. Miller made a refund.

A. We have open accounts with every one of those employment agents.

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Q. Yes, but after you sent a man to Napanee and he saw Mr. Miller, Mr. Miller sent his cheque here and paid the difference.

A. I presume he did.

Q. That statement you have there claims that Mr. Miller owed you \$72 that he had claimed to have placed thirty-six more persons than he had a right to get the money on. But it turned out as I understand, that after a cheque was supposed to have been sent, it never was sent. Consequently you had only a refund of \$34 instead of \$72. That is a pretty clear case of fraud is it not. Now Mr. Jones is a very respectable man. He has been a member of the council for the township of Richmond for many years. He has got practically no politics, and that is what he wrote with reference to Mr. Miller. Here is another man, Thomas Sewedani. Mr. Miller certifies that he placed Thomas Sewedani who landed at the port of Montreal on the 2nd day of August, 1907, on the steamship *Tunisian* as a farm labourer with Mr. D. A. Roblin of Adolphustown post office, province of Ontario, to work on his farm. The following are the terms of engagement:—\$12 per month, commission claimed, \$2. Signed Nathan B. Miller. Now I know Mr. Roblin. He is as respectable a man as lives in the place, a strong party man, and a strong Liberal and there is his answer to that. Kindly read it.

A. He says:—‘Thomas Sewedani has not been working for me. He stayed with my hired man D. Zenoli. He was a baker by trade and was offered a situation at \$10 per week but would not take less than \$25, so could get no employment about here at those figures. The fact of the matter was he would not work. He returned to England last autumn.’ And then he adds this postscript:—‘If experienced farm hands were sent to us they could get any amount of work. But farmers are dubious about engaging inexperienced hands as so many of them prove useless and expect as good wages as our Canadian hands.’

Q. Now how can that be explained Mr. Scott, that he could make a report on a case of that kind?

Mr. MONK.—What is the date of the report?

Q. Miller reported on the 5th August, 1908, and Mr. Roblin did not date his report, but the letter was sent to him on February 27, 1908, and I presume it was within a few days of that. Now here is another case. Mr. Miller reports that he has placed Benjamin Hodge and wife and children, three children, who landed at the port of Quebec on the 29th day of June, 1907, on the steamship *Canada*, as a farm labourer and domestic with Mr. A. Briscoe of Hawley post office, province of Ontario, to work on his farm. The following are the terms of engagement:—\$12 per month, commission claimed \$10, Signed Nathan B. Miller. That is on the 1st July, 1907, and Mr. Briscoe replied. Kindly read Mr. Briscoe’s reply.

A. Mr. Briscoe replied:—‘Said man never reached us. Altogether likely some person had hired him before he reached us?’

Q. Why should you pay a commission on such a case?

A. If we paid it we deducted it.

Q. What would you have done if there had been no reply at all? Suppose Mr. Briscoe had not replied to your letter what would you have done?

A. We would have deducted it.

Q. How would you know you would have done that if he had not replied?

A. If we did not get any reply we would take it as good evidence that we had not got the man placed.

Q. That is showing very little faith in your agents.

A. A great many of those farmers were sent men, but a man might have had three or four miles to go and I know of many instances where farmers along the road hired them before they were sent.

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Q. You have got the original documents.

A. Yes, I supplied them to Mr. Wilson.

Q. Now there is a case which I want you to explain because it is a little different. It is that of Mr. Fred. Stockwell and wife and children. Elizabeth, Catherine, Edward and Beatrice, who landed at the port of Portland on the 14th day of April, 1907, on the steamship *Kensington* and are reported as having been placed as a farm labourer and domestic with Mr. George Clements of Deseronto post office, province of Ontario, to work on his farm. The terms of engagement are \$26 per month, the commission claimed \$14. There are two reports on this case and I would like you to read them. You wrote this man a letter on February 26, 1908, and his answer in his own handwriting is there I think.

A. I wrote to Clement on February 26th and on February 29th he replied:—*'Re Fred. Stockwell. He worked for me about three months after his arrival here but not at the farming. I am in the contracting and building. Stockwell gave me excellent satisfaction and is a sober, honest and industrious man. I paid him \$9 per week as helper. He has worked the balance of the season for William H. Harvey, a cement contractor of this town, and received from \$1.75 to \$2 per day.'*

Q. He did not work at farming at all apparently?

A. Apparently not.

Q. Well there were some others that he reported and you wrote to him and got no reply. In those cases you allowed him full commission.

A. I cannot say I am sure.

Q. How can we find out?

A. If I heard the names I could tell you.

Q. Well, we will have to give them to you. Turn to 3931. That is the case of George Williams. In that case he only stayed one day.

A. Mr. O. M. Williams wrote saying:—*'Last spring I was very much in need of a man and could not get one around here. Mr. Nathan Miller was appointed to supply farmers with these immigrants as they came over. I bought a ticket in Napanee which I paid \$5, thinking I could not do any better, and sent it to Montreal. The man Williams came. I drove seven miles to meet him. He stayed with me one day. He said he did not take to farming. He was simply no use whatever, but needing a man so much I thought to try and do my best by patience and trying to learn him, thinking he would become satisfied, but it was no use. He simply walked off. I forbid him going without paying me for the ticket. He gave me \$3. The balance I lost. He also went across the bay from here and persuaded a chum of his who had hired with a farmer to leave too.'*

Q. Did you pay commission on that?

A. I cannot say without looking at the accounts.

Mr. MONK.—I suppose it cost us \$5 to bring him out from England.

A. Not necessarily.

Q. That is the kind of farm labourers you are bringing in.

Mr. SMITH (Nanaimo).—That is only one.

A. We are liable to make mistakes, but I am glad to say that the class of immigrants we are getting in Canada today is the finest in the world, including the much despised Englishman.

By Mr. Wilson (Lennox and Addington):

Q. Who are they despised by. I do not think it is fair to say that.

A. We are receiving the very finest class of immigrants.

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Q. And you have given your agents new instructions that have been advocated by the opposition for years.

A. I do not know anything about that.

Q. I do. If you look at Lord Strathcona's report or at Obed Smith's report, you will find that they state it is quality they want instead of quantity. Now, that is what we have advocated for years.

A. That is what we are getting now.

Q. I am very glad to hear it. That is what we want. These men have made a speciality of it in the report pointing out that these instructions have been given and that we must get a better class of immigrants—quality rather than quantity. Now turn to 1933, That is the case of E. R. Knight.

A. Mr. W. J. Bowen wrote:—'E. R. Knight came to me but only stayed three days and left for city or town.'

Q. That was not a farm labourer.

A. I cannot say, I am sure.

Q. Turn to 9327. That is the case of Herbert J. Paul, wife and three children.

A. Mr. James Breckenbridge wrote regarding Herbert J. Paul:—'I did have an immigrant but not Mr. Paul and wife. I had a man by the name of William Morrer, from Belfast, Ireland. He was a married man but his wife lived in Belfast, Ireland, and I must say he was as good a man as I ever worked with, that is after he got a knowledge of the work. I paid him \$15 a month. He only worked for me three months. He was a draper by trade and of course farming and him did not hitch very well, but while he was with me he was a first-class man.'

Q. Did you pay the commission on the wife although she is in Belfast?

A. I cannot tell you that for I have not the accounts.

Q. It looks like that. I have not the report that Mr. Miller made on the case, but it does seem to me that Mr. Miller having made a false report according to your own statement and got the commission on parties whom he did not locate it was a criminal thing. It does not seem to me that any man has a right to make a false report and draw money on it without being liable to criminal prosecution. Now why did you not take some action as you did in the case of Mr. Waugh of Chatham; why did not you report him to the Justice Department?

A. That is a matter for the minister.

Q. You did not do that?

A. I cannot say from memory. I have no doubt it was submitted to the minister first.

Q. By whom?

A. By me.

Q. You have not done that yet.

A. No, not in this case.

Q. What do you think about it?

A. I am not expressing any opinion.

Q. I think you ought to tell the committee what you think about a case like this. I think it is a very glaring case of a man who has robbed the country of \$72 by false reports and I think there should be some policy in your department as to what should be done with such a man.

A. If you write a letter making a complaint I will lay it before the minister.

Q. Do you pretend to say you do not know anything about a complaint?

A. I know you are making a complaint.

Q. I am simply giving you the documentary evidence from your own books. Is that not sufficient? Did anybody write you a letter asking you to prosecute Mr. Waugh?

A. Not that I know of.

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Q. Why pursue a different course here?

A. Somebody might have written.

Q. It is a little strange to me that you should require a private citizen to tell you what your duty is as an officer of the government. This will have to come up in the House if you do not see fit to have this man properly punished for his misdeeds. We will have to raise the matter on the floor of the House. I see nothing else for it. Now I want to ask you have you known of any other men who have defaulted in their payments.

A. No, I explained to the committee that we have open accounts and where we find that they have made a mistake we deduct it from the next payment.

Q. Have you made any other discoveries of men being short in their accounts like this.

A. I think that when we checked them up there were. We got replies from farmers saying they had not received men and we deducted them.

Q. Were there many?

A. I cannot say.

Q. Will you tell us how many there were in the provinces.

A. There were cases in the province of Ontario and the eastern townships of Quebec?

Q. Have you none in the other provinces?

A. No.

Q. Will you tell us how many men you have in the Province of Quebec placing immigrants? How many are on salary and how many on commission?

A. For placing immigrants there is none on salary.

Q. How many on commission?

A. I suppose 15 or 20.

Q. How many in Ontario?

A. I think about 150.

Q. None of those on salary?

A. No.

Q. All on commission.

A. All on commission.

Q. Could you send to this committee the files of the reports of these men from Ontario?

A. Do you want each individual file?

Q. Yes. You will send them up here in charge of the clerk.

A. I will bring them, but I won't leave them. I have instructions from the Minister not to leave them.

Q. If we go to the office can we see them there?

A. Certainly, any day.

Q. Well, I think we will have to go there and see them. It will be more convenient. But I would like to take a little more active part in seeing that justice is done to the people when men defraud the country.

MR. WILSON (Laval).—I may say I have been in practice for a good many years and there were many cases of violation of the Adulteration Act tested in our courts. There was the famous maple sugar case for example. I do not think it would be fair to say that a public employee in a department should take upon himself to become public prosecutor especially when one case was made against Mr. Miller. We cannot charge a man and have him prosecuted in a court of justice because he did not report. Of course I think as a matter of general policy, these offences should be punished.

MR. WILSON. (Lennox and Addington).—In the cases you speak of, were they government officials?

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Mr. WILSON (Laval).—They were government officials, but any citizen of this country can make a denunciation if he likes.

Mr. WILSON (Lennox and Addington).—Will you tell us how to proceed?

Mr. WILSON (Laval).—Yes. Before a justice of the peace. This could be prosecuted before a justice of the peace.

Mr. WILSON (Lennox and Addington).—Is it not the business of the department?

Mr. WILSON (Laval).—Yes, the Department of Justice.

Mr. BURREL.—I do not think that the case Mr. Wilson has cited, the maple sugar case, is analogous to the present. In that case it was discovered there was no standard of purity, but I think as a general principle when a government has certain regulations laid down and officers are there to perform their duty, the duty of prosecuting does not fall on private citizens but on the department. No private citizen can or will lay information or prosecute when the rules and regulations of the department are being transgressed and when the officers of the department are eminently the parties to prosecute.

By Mr. McIntyre (Strathcona):

Q. How much did the country lose by this transaction?

A. Nothing.

Q. Is the man dismissed?

A. Yes, and the copy of his letter of dismissal has been published in the *Napanee Beaver*.

By Mr. Molloy:

Q. Is it not a fact that an agent might be misled by the man who is applying for a place on a farm?

Mr. WILSON (Lennox and Addington).—That is not the complaint.

A. We place men with farmers who have been in other occupations in the old country.

By Mr. Wilson (Lennox and Addington):

Q. That is not the complaint at all. The complaint is that Mr. Miller placed men, or said he placed men, that he did not place at all in the first instance, and in the second place he stated that he placed men as farmers or farm labourers who were not farmers or farm labourers.

A. I am willing to admit that is what he did.

Q. And he should be punished.

A. Now we do not pay one of those claims until we get the signature of the farmer.

By Mr. Wilson (Laval):

Q. You would not like to say that in every case these parties were acting in bad faith and that they should be prosecuted?

A. Oh, no.

Mr. WILSON (Lennox and Addington).—What do you say about the first case, that of Spinks who was located with a grocer in the town of Napanee, he and seven children. Mr. Miller afterwards found he was located there and he reports that he located him with a farmer when he did not locate him at all, and the man with whom he reported he had located was a grocer.

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Mr. WILSON (Laval).—I would like to examine that man under oath.

Mr. WILSON (Lennox and Addington).—There is the written statement.

By Mr. Wilson (Laval):

Q. I would like to find out from Mr. Scott how long an immigrant is supposed to work on a farm to be a farmer's help.

A. No time at all.

Mr. WILSON (Lennox and Addington).—But this man did not go on a farm at all.

Q. But suppose he was on a farm one day and made a change. Would you interpret that as a crime if the agent claimed his commission?

A. We would pay it—he had done his part.

Q. Is it necessary that an immigrant should be an expert farmer and have experience in the old country before being brought here?

Mr. WILSON (Lennox and Addington).—Mr. Jury was out here two or three years ago and he said unless a man had been a farmer before they would not pay a commission on his being sent to Canada.

Mr. McINTYRE (Strathcona).—That is a bonus.

A. A different thing altogether.

Mr. WILSON (Lennox and Addington).—That shows that a farm labourer was reported as a farm labourer because he worked as a farm labourer in the old country.

A. An entirely different proposition. You are mixing two things. In the old country we pay booking agents a bonus of £1 per head on farmers and domestics, that is those who have been engaged actually one year as farmers or domestic servants. In placing men in this country we do not care whether a man has been a farmer or not.

By Mr. Smith (Namaimo):

Q. What is the amount of commission you pay for placing them?

A. \$2 for each man. Last year we paid men, women and children, this year we do not pay for women and children; only men.

By Mr. Sproule:

Q. What evidence satisfies you that you are sending a farmer a man who is accustomed to farming or who is a farm labourer? What evidence have you to satisfy you that you are sending that class of man?

A. We do not handle them here at all. We send a list of our employment agents to the booking agents in the old country. When a booking agent sells a ticket, we will say to some country village, he immediately notifies our agent at that point that he has sold such and such a ticket to such and such a man, giving the necessary information as to his experience, whether he is an experienced farm labourer or a general labourer. Ninety-five per cent of the ocean tickets sold in the old country are sold thirty days before the ship sails, so that the agent has thirty days on this side to look around and find whether he can place that man.

Q. How can you call him a farm labourer if he has not had experience?

A. Some of the best men in this country have had no farm experience in the old country.

Q. If you send me a man how would I know that he was a farm labourer?

A. If you wrote to me we would send your letter to our agent at the point nearest to you and he would select a man whom he thought would be suitable.

Q. A farm hand?

A. If you asked for an experienced hand.

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Q. What information have you to enable you to know that this man is a farm hand?

A. The booking agent when he sells a ticket advises our agent that he is a farm hand.

By Mr. Wilson (Laval):

Q. You have to take his declaration?

A. We take his word.

Q. An agent in the old country would not write to an agent here about a man who was not a farmer. He would not get any commission?

A. Yes, he would get his railway commission and steamship commission.

By Mr. Wilson (Lennox and Addington):

Q. If he was not a farmer in the old country?

A. I say a steamship agent in the old country would get steamship and railway commissions.

Q. But nothing from you?

A. No.

Q. What inducement would he have to write to an agent in this country?

A. To sell him his ticket. It is a great advantage to the booking agent in the old country to know that they can send these men out and get work for them.

By Mr. Sproule:

Q. Are we right in assuming that you have no definite information as to the employments of those people before they come here?

A. We have information.

Q. So you write a farmer that you are sending him a farm hand?

A. No, not an experienced farm hand. We repeatedly send out circulars to those employment agents asking how many men they can place. Here is a circular I send out: 'Please let me know by return mail if you are willing to continue in your position as Canadian government employment agent for the present year. It is my intention to correspond at once with the booking agents in the old country and endeavour to secure if possible for each employment agent the number of immigrants required for their districts. Underneath is a form which I would like you to fill out showing the numbers wanted, the month during which they are wanted, and the rate of wages the farmers are willing to pay.' We divide the classes into four:—Experienced farm labourers, single; experienced farm labourers, married; inexperienced farm labourers, single; inexperienced farm labourers, married. The domestics are another class. These are the different classes that we place with farmers. This man replied that he could place 10 experienced farm labourers single in March, 5 in April and 5 in May; 2 experienced farm labourers married in March, 2 in April and 1 in May; 2 inexperienced farm labourers single in March, 2 in April, 2 in May; that he could not place any inexperienced farm labourers married and that he could place 2 domestics in February, 5 in March, 7 in April and 8 in May.

Q. And did you send him any?

A. That is simply his request. I do not know whether he received any or not.

By Mr. Wilson (Lennox and Addington):

Q. That is the man you dismissed?

A. I am simply quoting that as a sample of the circular.

By Mr. Smith (Stormont):

Q. Was it not a crime for this man to charge commissions on men that he did not place?

A. I would not like to say that.

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By Mr. Monk:

Q. He was found guilty.

A. He was.

By Mr. Sexsmith:

Q. Do I understand that the government immigration agents in the old country are allowed to pass immigrants to this country other than those on whom they have received a bonus from the government?

A. No, our paid agents in the old country only recommend those to come to this country who are farmers, farm labourers or domestics.

Q. I understood you to say that they might send others in order to get steamship commission.

A. No, I did not say so. We have 2,000 booking agents with whom we do business.

Q. Then you have no way of restricting those people. They can send any immigrants they like.

A. No, we would not allow them to land. They are all medically and civilly inspected at the ports.

By Mr. Sproule:

Q. What information have you which justifies you in sending men to fill an order and in assuming that you are sending farm labourers?

A. They are divided up into four classes.

Q. Take the divisions relative to farming—experienced, inexperienced, married or single. Are we not correct in assuming that they have had some connection with the land or farming before they come here, otherwise they could not be put in that category.

A. We distinctly say inexperienced.

Q. Take the experienced class. Suppose I sent to you for an experienced farm hand and you send me a man. How do you reach the conclusion that you are sending an experienced man?

A. From conversation with the man.

Q. He makes a statement on which a bonus is paid.

A. Not necessarily.

Q. If he is a farm hand?

A. Yes.

Q. You have nothing except his own statement.

A. No.

By Mr. Sexsmith:

Q. I understand that none but those physically and mentally sound are allowed to land in Canada.

A. That is correct.

Q. I have a report here of the inspector of prisons for Ontario dated 1907, which says:—‘Although the year closes with the largest number that have been in confinement in the jails of Ontario within the past twenty years this increase is not due to any increase in crime in the province, but is largely due to Canada, and especially Ontario being made the dumping ground during the past year of some most undesirable immigrants. Every jail I have visited within the past six months has had among its prisoners persons who have been only a few months in this country. Some of them have spent most of their lives in English prisons. Several have admitted that they have been discharged by English magistrates on condition that they would emigrate to Canada. There must be something radically wrong with immigration

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regulations that will permit such apparent neglect in the inspection of persons seeking and obtaining passage as immigrants to this country. The whole system of encouraging such people to seek a home in Canada is wrong and the sooner the conditions complained of are recognized and changed the better. It has cost this country a large expenditure during the past year that might have been largely avoided if a more rigid system of investigation and inspection had been made before allowing undesirable immigrants to embark for Canada. The system that permits and encourages immigration without a proper discrimination cannot be defended. Some of the prisoners in our jails do not hesitate to place the responsibility for immigration on the agents abroad who urge them to seek shelter in this country. During the past year it has cost the prisons and public charities of Ontario thousands of dollars to provide for these people, many of whom are quite incapable of earning a living here. Several of them have, when landed in this country, been afflicted with chronic diseases which could not pass unobserved if a proper inspection had been made. It is a mistake to think that the inspection can be made satisfactorily in the hurry and bustle of landing on this side of the Atlantic. The inspection to be successful should be made before embarking in the old country.'

Mr. MOLLOY.—I hope the department and the government will do everything possible to keep out undesirable settlers, those suffering from disease, and I hope the department will be just as wide awake regarding the people who go from the province of Ontario to the west for if there are any greater scoundrels to be found I would like to know where. The coming of some of those people to this country cannot be avoided. They are bound to come into the country.

Mr. MONK.—I rise to a point of order. A question was asked of Mr. Scott and I think Mr. Scott should be given an opportunity of answering that question.

Mr. BLAIN.—Does not the honourable member think it would be a good thing not to have that word 'scoundrels' go down.

Mr. MOLLOY.—The term 'scoundrel' would apply to those who were arrested and prosecuted in the west last year.

Mr. BLAIN.—My honourable friend makes a general statement that those who go westward from the province of Ontario are scoundrels. I do not think my honourable friend would like that to go down.

Mr. MONK.—I think everything should go down. There is a question put to Mr. Scott which I think should be answered.

A. I did not understand the question.

Q. I understood you to say that no undesirables or people mentally or physically weak were allowed to land in this country, and then I read this statement from the report of the Inspector of Prisons for Ontario.

A. It is the Ontario government report and I would not like to express an opinion about it.

Q. It is the report of the Inspector of Prisons and Jails.

A. I might state this. I have some figures here which show that during the last calendar year, that is the year 1908, we refused admission at Canadian ocean ports to 634 immigrants.

By Mr. Wilson (Lennox and Addington):

Q. Why should they have not been refused on the other side of the water?

A. We have no inspectors there.

Q. They should have been—that is my opinion.

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Mr. McINTYRE (Strathcona).—That report was up before and it was shown that the Ontario government themselves were making very little restrictions. They were aiding the Salvation Army and other charitable institutions which were bringing out a pauper population.

Mr. BLAIN.—What other institutions?

Mr. McINTYRE (Strathcona).—There is the Church Army. If the member for Peel will only look up the estimates of the Ontario government for 1907 he will find that they paid thousands of dollars to these societies; but here they take the report of the jails and they do not designate the time that those people have been in the country. I may say that the medical officer of the Immigration Department took occasion to visit the prisons and asylums of Ontario and asked those very same officers who made that report to point out where the great hardship was entailed on the province by means of immigration, and according to the report of the officer I refer to, the charges were not substantiated.

Mr. MONK.—He only spoke of trachoma on that occasion.

Mr. McINTYRE (Strathcona).—We will have him here if the committee wishes. I say that the men in Ontario who made that report do not make restrictions on immigration. I want to say this with regard to the medical examination. I have had occasion to visit the ports, at my own expense, to ascertain the kind of medical inspection carried on. I went through the examination for the experience and I passed through as an immigrant.

Mr. SPROULE.—How long did it take you?

Mr. McINTYRE (Strathcona).—Not very long. I asked the doctor how long it would take him to size up my physical characteristics generally. Would he strip me off to find out whether I was an able-bodied man or would he take me on appearances. I asked the doctor if he would submit those people to indignities. Would he have those people actually stripped. Does he know that one of the very best things for Canadian passenger shipping is the fact that the Americans are putting so many frills on their examination. Does he know that the reason why so much passenger traffic is coming into Canadian channels is because immigrants do not want to pass the American immigration examination. Now I do not think we should do anything more than what is sufficient. I will agree with any man in this House in doing what is efficient in the way of examination, but when a number of able-bodied people come along and you have these people stopped by two medical examiners, asked all sorts of questions as to their mental condition I think you have fulfilled all the conditions required. Now here is a point which many people omit when they talk about immigration. The moment an immigrant is bemuddled he is asked to step into a side room. The moment a face rash probably, a most harmless rash, or some eruption on the face is seen, he is told to stand aside, and so with the eyes, if they are temporarily inflamed, he is told to stand aside. When the examination of the ship load is through and the able-bodied people have been passed, those who have been told to stand aside are detained, perhaps for weeks, before they are allowed to go. They are taken to the hospital, they undergo a lengthy examination in the division room, and if the officials are not satisfied they are sent to the division hospital where the chief medical officer examines them. I have every sympathy with those who want good immigrants. I am sure no man in the west at any rate, wants a cursory examination or a careless examination, or wants undesirable people. We must have immigrants even more than the people in the east. They must come, and I will stand up with anybody for a good class. But I do not think we should impose an examination that would be no more than showy.

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Mr. WILSON (Lennox and Addington).—I would like to ask Dr. McIntyre whether he thinks any medical officer or any staff that we have at any port in this country could make a thorough examination of 7,000 people in one day.

Mr. McINTYRE.—(Strathcona).—My honourable friend is speaking as though one man does it. There are relays.

Mr. WILSON (Lennox and Addington).—Dr. Bryce in his report said he had dumped on him in one day as many as 7,000.

Mr. McINTYRE (Strathcona).—I do not think that time enters into this. When you say 7,000 people you must keep in mind that the majority are able bodied people.

Mr. SPROULE.—In the face of the evidence that was given before this committee that there were passed as many as from 3 to 5 per minute—I ask Dr. McIntyre if he would regard that as a sufficient length of time for any medical man to make anything like an intelligent examination of a crowd of people?

Mr. McINTYRE (Strathcona).—You must remember this, that those people are in a line as the medical officers watch them coming along and they may pass in three or five minutes. In passing able bodied men, men who are evidently healthy, I do not think that time is a consideration.

Mr. SPROULE.—The honourable member is speaking of an extreme type of physical manhood. But take those who are anæmic or partially anæmic and emaciated and have other evidences of disability, who have been passed by hundreds and thousands. With reference to that class would he regard the examination as sufficient?

Mr. McINTYRE (Strathcona).—I have said that those of a suspicious type of health are set aside and properly examined.

Mr. MONK.—I have a great many questions to ask Mr. Scott, but I do not think there is time to get them answered to-day, particularly if we discuss the points as they come up. I was going to ask if Mr. Scott would come to the next meeting of the Committee.

Mr. SCOTT.—Any day will suit me.

Mr. MONK.—Then I will defer the questions I have to ask.

Committee adjourned.

APPENDIX No. 2

HOUSE OF COMMONS,

COMMITTEE ROOM No. 34,

WEDNESDAY, April 21, 1909.

The Select Standing Committee on Agriculture and Colonization met at 10.30 o'clock a.m., the Chairman, Mr. Schell, presiding.

Examination of Mr. W. D. SCOTT continued.

By Mr. Monk:

Q. I have another Committee meeting at 11 o'clock and I want to be as brief as possible in the few questions I am going to put to you, more particularly as the bill on Immigration, which is at present before the House, is awaiting the closing of your evidence. Let me ask you in the first place: since when has the department employed the Rev. Mr. Berubé? If you have a contract with him state the terms of that contract and also what salary he is receiving?

A. I think he was employed some time last year on a special mission to the United States on colonization work. He was engaged, I think, for three months at \$100 a month. That amount was to cover his expenses as well as his salary. This year I think he has an appointment for three months on the same conditions.

Q. Would that \$100 a month be all that has been paid him?

A. Yes, I think so.

Q. Would you make sure as to that?

A. Yes, I will.

METHOD OF ASCERTAINING MORAL QUALIFICATIONS OF IMMIGRANTS.

Q. How do you ascertain the moral qualifications of the immigrants who arrive? What is the method employed at the landing station to find out whether they are thieves or honest men?

A. That is a pretty difficult question.

Q. Will you just say what the method is?

A. Every immigrant passenger that sails from the old country to Canada must fill out a form stating his name in full, country of birth, race of people, destination, whether he has ever been in Canada before and if so when, where and how long; whether he intends to permanently reside in Canada, the sex, age and whether married or single, whether he is able to read and is able to write, his occupation, his intended occupation; whether he has ever worked as farmer, farm labourer, gardener, stable man, carter, railway sectionman, navvy or miner; if so, how long and when; his religion, whether he or his blood relatives were ever insane or had tuberculosis or epilepsy, and if so, full particulars; by whom his passage was paid; whether he is going to join a relative and if so what relative, and the name and address of such relative; the nearest relative in the country from which part he came, and so on. It was also intended to have inserted a question in the form containing these particulars as to whether the purchaser of a ticket had ever been convicted of a felony, but the steamship companies objected very strongly to it. They said that people would simply lie about it, and that it would not work at all. This form, a copy of which I submit to the Committee, is filled out and signed by the passenger when he books his passage and is also certified to by the booking agent.

Q. Since when has this regulation been in operation?

A. It was started on the 1st of this month.

Q. Will you place a copy of the printed form before the Committee as Exhibit No. 1?

A. Yes.

FORM FILLED OUT BY IMMIGRANT WHEN BOOKING PASSAGE.

.....S.S. LINE.

The Canadian Immigration authorities now insist under penalty that passengers to Canada upon purchasing tickets give full and explicit answers to the questions underneath. Canadian born passengers, passengers who have resided in Canada and who have been absent less than one year, and saloon passengers going to Canada for a visit without intending to reside there, need answer only questions 1, 2, 3, 4, 5 and 6. All other passengers must give full answers to all questions and in the event of this form not being in the hands of the purser before the ship sails will be called upon to fill in the form during the passage. The head of a family may fill in the forms and sign for members of family accompanying on same vessel.

- (1) Name in full.....
- (2) Country of birth.....
- (3) Race of people.....
- (4) Destination (post office and province).....
- (5) Ever been in Canada before?.....When?.....Where?.....How long?.....
- (6) Intend to permanently reside in Canada?.....
- (7) Sex.....(8) Age.....(9) Married, single?.....
- (10) Able to read?.....(11) Able to write?.....
- (12) Occupation.....
- (13) Intended occupation.....
- (14) Ever worked as farmer, farm labourer, gardener, stableman, carter, railway sectionman, navvy or miner. If so, how long and when?.....
- (15) Religion.....
- (16) Self or blood relatives ever insane or had tuberculosis or epilepsy? If so, full particulars.....
-
-
- (17) By whom was passage paid?.....
- (18) Going to join a relative?.....What relative?.....Name and address?.....
- (19) Nearest relative in country from which party came. Relation.....Name?.....Address.....

I hereby certify that I made true answers to the above questions, which were asked in a language understood by me and which answers have been recorded above. I understand that I may on arrival in Canada be called upon to swear to the truth of above answers and that a false oath is punishable by fine or imprisonment.

Signature of passenger.....

I have sold to above passenger steamship ticket No.....for SS.....sailing from.....on the.....day of.....19.....and railway order No.....reading over.....railway to.....

Signature of booking agent.....

Address.....

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Pursers will use this form in preparing manifest and will see that names are arranged alphabetically by nationalities. This form with manifest to be handed to Canadian immigration agent at port of landing to be forwarded to Superintendent of Immigration, Ottawa. In case of vessels arriving at Portland, Maine, hand to American Commissioner of Immigration.'

Q. You say that the filling in of this form has been in operation since the 1st of this month?.

A. Since the 1st of this month. It may have been in operation for a few days in March but we tried to get it started at the beginning of the present fiscal year.

Q. Was there anything of that kind in force previously?

A. No.

Q. When the passenger arrives at the landing place his examination from the moral standpoint only lasts about a minute or so?

A. The immigration officers do not ask him whether he has been convicted of theft or anything of that kind.

Q. Do you see any objection to the moral character of the immigrant being ascertained on the other side of the Atlantic?

A. I do not see any.

Q. I will give you an instance: Is there anything to prevent our making it a condition that the immigrant before leaving the other side should furnish to the booking agent, or in some other manner, a certificate from his native place of his moral qualifications? Is there any objection to doing that as far as you can see?

A. I could not see any objection myself. I do not know whether the immigrants would answer truthfully or not.

Q. Could he not for instance furnish a certificate from the mayor of his village?

A. Yes, he might be able to do so.

Q. Or a certificate from his bishop or minister, some kind of certificate such as every man, as a rule, bears with him when he comes to America, if he wants to be received by people here, the equivalent of a letter of introduction?

A. I do not think they have anything of that kind in the case of persons coming to the United States.

Q. No, I am asking you if the thing is feasible?

A. It might be; I would not like to say. It is a question whether they would tell the truth or not.

Q. What objection do you see to it if he should hand to the examining authority on the other side that document which would show that the immigrant is not a criminal?

A. I would have no objection.

Q. You would have no objection?

PROPOSED MEDICAL INSPECTION AND REPORT BY SHIP SURGEONS.

A. No. It has often been said that there should be a detailed medical examination on the other side. That I think is impossible on account of the way in which the ships are loaded with immigrant passengers. The ship goes alongside the Princess Landing Stage, trains come in and the immigrant passengers are embarked within a comparatively few minutes; there is no possibility of a detailed medical examination. But we propose as soon as possible to have the ship's doctor give a medical certificate, which will appear on the first page of the vessel's manifest, to this effect:

'I hereby certify that I have daily during the present passage made a general inspection of the passengers on this vessel, and that I have at least once during the passage made a detailed individual examination of each immigrant on board and that I have seen no passenger thereon who I have reason to believe is, or is

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likely to become, insane, epileptic or consumptive or who is idiotic, feeble-minded or afflicted with a contagious, infectious or loathsome disease; or who is deaf, dumb or blind or otherwise physically defective or whose present appearance would lead me to believe that he or she might be debarred from entering Canada under the Immigration Act of 1909 with the exception of the persons whose names are enumerated on the 'ship surgeon's list for medical examining officer' which I have prepared for such officer, giving my medical opinion on the cases therein dealt with; and that there were no deaths or births during the passage except those mentioned under said list.'

We propose that the ship's doctor shall make a detailed examination of every passenger and file it with our examining officers at the port the names and cases giving his observations on them.

Q. That examination will take place during the voyage?

A. During the voyage. They have got from six to ten days in which to make that examination.

Q. Is it intended to introduce that change?

A. It is intended to introduce that change.

Q. That has been decided upon?

A. We have decided upon it quite recently but we have not put it in force yet.

Q. Is that examination and certificate of the ship's surgeon provided for in the bill which is now before the House?

A. It is not necessary to provide for it in the bill; we can do so under regulation.

By Mr. Wilson (Lennox and Addington):

Q. Does not the United States provide for such regulation by statute? I think there are a number of such provisions in their Act?

A. No. I think the present Canadian bill is very much the same as the American Act.

Q. I know there are some of those things provided for in the American Act.

A. Then as I was saying the ship's doctor files with our examining officers a list giving the passenger's name and the reason why the immigrant should be, or may be, detained.

By Mr. Monk:

Q. If it has been considered possible to get this information respecting the immigrant during the voyage across the ocean, why do you say that it would be impossible for him to furnish the certificate of a reputable physician on the other side who knows his condition?

A. I did not say it would be impossible.

Q. Then you see no objections to this being done?

A. None at all.

Q. It would be an advantage to know that a man of that kind was not afflicted with some physical defect or with some disease that would be an objection to his landing in Canada?

A. A medical certificate would be of no use in determining whether the man is a criminal or not.

Q. Of course, from physical examination you could not find out whether the immigrant is a criminal or not?

A. The certificate which you propose is simply as to whether he is a respectable citizen or not?

Q. Why could he not furnish a certificate from his physician on the other side?

A. Well, in cases where the immigrant is assisted in any way we have a form for him to fill out. It involves a lengthy medical examination.

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Q. In what particular case is that?

A. In cases where the immigrants are assisted in any way.

By Mr. McIntyre (Strathcona):

Q. Assisted by a society?

A. By a society. I do not appear to have brought one of these forms with me, but it involves a very lengthy medical examination.

Q. Who makes out this form?

A. A physician.

Q. Selected by the society interested?

A. By the society, I suppose.

Q. He must be a regular practising physician?—A. Yes.

Q. Now, you propose a new set of regulations that are to be put into force by the ship's surgeon?

A. Yes.

Q. Were not these regulations practically adopted before by steamship companies, owing to responsibility of deportation being imposed upon them?

A. The bill of health to be signed now is more severe.

Q. Would not the responsibility of the steamship company for the deportation or return of the passenger to the country from which he came have the effect of making the ship's surgeon really an examining officer to the department? The surgeon knows that the steamship company is going to be held responsible?

A. Surely.

Q. For the return of all the sick people that come to this country? If they develop epilepsy or become insane, troubles that cannot be determined by a simple examination, the responsibility that rests on a steamship company for the return of the immigrant physically or mentally unfitted to land in this country would make the ship's surgeon careful as to the people who were allowed on board?

A. I would think so.

By Mr. Monk:

Q. I understand you to say that there would have to be a certificate?

A. From the regular ship's surgeon. We propose that the ship's doctor shall make a daily inspection of the passengers and at least once during the voyage make a detailed inspection of each immigrant and report any that he thinks are defective. If he does not, we propose to punish him. If the ship's surgeons do not report we prosecute them. We have had several prosecutions for not reporting.

Q. I am glad to hear you say that from your experience you find no material objection to the immigrant being obliged to furnish a certificate of moral character and a certificate as to his physical condition and being obliged to bring it with him when he comes to this country?

A. I said I would have no objection to his furnishing a certificate from either the parish priest or his clergyman, or the mayor of his town, as to his character. I did not say anything about the immigrant furnishing a medical certificate, as to his being examined individually in the old country by a medical officer.

Q. What difference is there between the one and the other?

A. The difficult immigrant to deal with is the criminal.

Q. Supposing an immigrant, as we have had a great many instances, comes from an insane asylum on the other side?

A. Yes.

Q. It is very difficult for an examining officer to discover that fact when the man lands here under certain conditions?

A. Certainly.

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Q. Do you think it would be wise to have a certificate to the effect that he has never been mentally affected?

A. I have already filed a copy of the form which the immigrant must fill in before the booking agent declaring that neither the immigrant himself or his relatives have ever been insane.

Q. That is intended to be effective for the future?

A. Yes.

Mr. McINTYRE (Strathcona).—Would you propose, Mr. Monk, that the immigrant should get a medical certificate?

Mr. MONK.—He should be given a certificate and no bonus should be paid on him unless he has it.

Mr. McINTYRE (Strathcona).—Supposing a person wants to evade the law and denies that he has ever been in an asylum, which would be quite possible. How are you going to disclose the fact that he was in an asylum once?

Mr. MONK.—You would have such faith as you could attach to the certificate of a physician in the locality from which the immigrant comes.

Mr. McINTYRE (Strathcona).—He might easily change his location, within a year say.

Mr. MONK.—There might be fraud no doubt.

Mr. SCOTT.—There might be substitution.

Mr. MONK.—There might be undoubtedly. He might do the same thing with the certificate as to his moral character. He might commit fraud in regard to that but one is exposed to such a thing in all cases.

Mr. McINTYRE (Strathcona).—An immigrant is asked before entering the United States if he ever was insane. Do you think it is wise to ask an intending tourist to this country or an intending immigrant the question whether he ever was insane? You think it would be desirable?

Mr. MONK.—I think it would be desirable to control that man.

By Mr. Monk:

Q. Take the immigrants who come from the continent, it is the easiest thing for them to furnish proof that they are morally qualified. Take the Frenchman, for instance, he never travels without a ticket in which everything that he has done since he was, so to speak, a man, is entered. He has his livret and that certifies as to everything he has done, or whether he has ever done anything wrong?

A. Whether he has completed his military duties and so forth.

Q. Frenchmen never travel without it, and I think the same is the case in most continental countries. In England there is always a civic authority who can furnish a certificate.

A. I might say that the whole intention of the Bill which is now before parliament is to strengthen the department in keeping out undesirable immigrants. That is the whole purpose of the Bill.

By Mr. Blain:

Q. As a matter of fact, there has been no medical examination heretofore of immigrants before they took passage, is that correct?

A. They are examined by the port doctor, representing the British board of trade, before they go on board the ship.

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Q. Before they go on board the vessel?

A. Yes, they are medically examined by the port doctor.

Mr. McINTYRE (Strathcona).—Under the British board of trade.

By Mr. Blain:

Q. I thought the objection you were pointing out was that it was impossible to make such an examination because the trains come in with the immigrants and they are on board the vessel inside of 15 or 20 minutes?

A. I said it would be quite impossible to make any detailed examination before they go on board ship.

Q. What medical examination is made before the immigrants go on board the vessel?

A. The doctor looks at them going up the gangway, that is all. It is a very superficial examination.

By Mr. Monk:

Q. I would ask you if you could lay before the committee a list of the immigration agencies that we have in the New England States with the salaries in each case, and any reports you have for the past from our immigration agencies especially these in the States referred to?

A. Do you want the names?

Q. The names, the location, the salaries and any reports you have from them?

A. Yes, I can do so.

Q. And the cost of the office. Would you add that? I do not think it would take you long to prepare that, and if you will leave it with the secretary I will be able to look it up?

A. Yes.

Q. Is there any examination of the Americans who are going into the Northwest? I hear there are a great many going in this year?

A. There is a medical examination.

Q. Is there any examination as to their financial resources?

A. Yes.

Q. As to the amount of money that they have?

INSPECTION AT INTERNATIONAL BOUNDARY.

A. Yes. During the last year we refused at the international boundary admission to 4,580 people. I might say that it is just about a year now since our inspection started at the boundary and during that time we have rejected 4,580 people.

Q. For physical disability?

A. For different disabilities.

Q. And are they examined as to the amount of money they bring with them?

A. Yes. Our officers make sure they have got sufficient money. They do not take a record of the actual amounts of money that they have.

Q. I heard the statement made in the House yesterday that 70,000 had come in this year and brought in seventy millions of money?

A. Seventy thousand have not come in but we expect about that number this year.

Q. Do you expect they will bring in with them about seventy millions of money?

A. Yes, I should think so.

Q. There is no record kept of the amounts of money which they bring with them?

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A. The Customs Department keep a record as to the value of settler's effects. Where our agents in the United States issue a certificate which entitles the settler to the low rate on the Canadian railways of a cent a mile, we will say from Portal north, they ask the intending settlers the questions of the amount of money they have.

Q. And is that information transmitted to you?

A. We get that information here.

Q. I asked you about our agencies in New England. I now ask you if you can place another statement before the committee as regards church organizations with whom we have contracts or arrangements showing the nature of such contracts or arrangements in each case.

A. Such an arrangement with the Salvation Army do you mean?

Q. And there is the church army, I think?

A. We have no contract with them. The only religious organization we do any business with is the Salvation Army.

By Mr. McIntyre (Strathcona):

Q. Is there not an organization known as the King's Daughters or something of that kind?

A. That is not a religious organization. There is also the National Council of Women in Montreal.

By Mr. Monk:

Q. I mean only the church organizations?

A. The only one we do any business with is the Salvation Army.

Q. Have you a different arrangement with the Salvation Army.

A. They are booking agents and we pay them the usual booking agent's bonus. We also pay them a certain amount on account of rent for their immigration office in London.

Q. Has that arrangement been reduced to an agreement in writing?

A. It is authorized by order in council.

Q. Would you mind putting a copy of that order in council in the hands of the secretary of the committee and a statement of how much you have paid the Salvation Army in bonuses during the last fiscal year and since the close of that year up to date?

A. That is for the fiscal year 1908-9?

Q. For bonuses and in respect of rent or any other reason?

A. Yes.

METHOD OF DEPORTING UNDESIRABLE IMMIGRANTS.

Q. One word, Mr. Scott, in regard to deportations. Could you give the committee some idea how deportations are effected? For instance when a man is arrested in Montreal or Toronto and found to have been a criminal in the old country, how is his deportation effected? Is it the magistrate who notifies you or how is the matter brought to your knowledge?

A. In some cases the magistrate notifies us and in other cases according to the Act it is the duty of the clerk of the municipality. We have a regular printed form giving full particulars as to the man's name, when he landed and all about him. We investigate the case and if we find it is of a deplorable nature we deport the man.

Q. How do you proceed to do that? Is the order signed by the minister or yourself?

A. I sign an order notifying the steamship company.

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Q. Do you take him back to the port of departure at the expense of the government?

A. The Act provides that he shall be deported any time within two years at the expense of the transportation company.

Q. For instance if a criminal is arrested in Toronto and his deportation ordered do you have to convey him to Halifax, St. John or Quebec?

A. One of our own officers conveys him back.

Q. You send an officer with him?

A. We have an officer in Toronto, one in Hamilton, one in London, one in Kingston, several in Montreal, several in Quebec and so on.

Q. And your officer takes charge of these men who are deported?

A. He takes charge of them and delivers them to the steamship company.

Q. Where?

A. In the case of men for deportation coming from west of Montreal our officers deliver them to our agents in Montreal and they take care of them until such time as the steamer will leave. That is in summer. In winter they are taken to St. John or Halifax.

Q. Is the expense incurred before the criminal is actually put on board the steamship and placed in the hands of the steamship company borne by us?

A. I was going to explain that under the Act the cost of the deportation of immigrants is supposed to be borne by the transportation company at any time within two years. The transportation companies made representations to Mr. Oliver claiming that that was a hardship on them; that a man might have been a year and a half in Canada and then got into trouble and it was a hardship on them to ask them to bear the cost of transportation. The arrangement he made was that if deportable immigrants were less than one year in the country the transportation company would bear the cost; if more than one year and less than two, the department would pay the rate from Montreal to Liverpool which is I think \$15. The railway companies give us transportation where it is shown that the deportable immigrants have travelled over their line.

Q. I see that we have paid a considerable amount?

A. I think that for last year it cost us about \$25,000

By Mr. Blain:

Q. You say that an examination is made to ascertain the amount of money possessed by each immigrant. A few months ago 300 immigrants landed in Toronto and it was reported they had nothing to live on?

A. I investigated that report and found there was not a word of truth in it.

Q. It was reported that those immigrants had nothing to live upon and that the charitable institutions in Toronto were taking care of them?

A. There was no truth in the report at all.

Q. What were the facts?

A. That they all had money and the great bulk of them were simply passing through Toronto. The train happened to get in at about 12 or 1 o'clock at night and they had to remain in the city until the morning trains went out. The restaurant-keeper at the station opened up his restaurant and they purchased all the food they wanted. The restaurant-keeper says he did a very good business. They were all gone again next morning.

By Mr. Monk:

Q. I see that there is a provision in the new law to the effect that an immigrant must have a certain amount of money in his possession?

A. Yes, at least \$25.

Q. Do you think it would be prudent to allow the examining agent to be the judge as to the amount of money in a man's possession? For example if a man arrives here who is hale and hearty and a desirable immigrant in every respect, who has enough money to reach his destination but does not happen to have exactly \$25, it would seem a pity to exclude him?

A. We would not turn him back. Our agent would use his discretion, especially if the immigrant was going to friends at a point in the country, who would take care of him.

Q. The law seems to allow no discretion?

A. The present law does.

Q. I think it fixes a minimum of \$25?

A. The order in council fixes the amount at \$25, but that is only in case he has no work guaranteed or no friends where he is going, but is an absolute stranger.

Q. In a case of that kind, if he had enough money to enable him to reach his destination and the agent thought he was a fit and proper person——

A. And was was going to a country point and was of the class of men that have no difficulty in getting work—a farm labourer, for instance—the agent would not stop him. The agent must use discretion.

Q. What amount of immigration do you anticipate we will have this year from the outlook so far?

A. Our total immigration up to the last fiscal year was 146,908, a decrease of 44 per cent as compared with the year before. That was up to the end of March. I might say that March of this year shows an increase of 7 per cent over March of last year.

By Mr. Lake:

Q. You think the total immigration may reach 200,000 this year?

A. Pretty well up to it.

Q. You have no machinery in your department to send the immigrant to any particular part of the country, as they have, I think, in the United States? Immigrants come here and are free to go where they like, are they not?

A. Immigrants of the agricultural class coming to Ontario are all sent to certain points by the booking agents. They are booked through to their destination by the booking agents. I think we have 150 different points where they are sent to.

Q. The interest of the transportation companies is to take them as far as possible.

A. I suppose the more money they can get the better. The steamship companies have increased the ocean rate again this year.

Q. Are you continuing this year the system of locating agent?

A. Yes, in Ontario and the eastern townships.

Q. Anywhere else?

A. We have a few in some counties in Quebec, I think four or five altogether. The number of French immigrants that come into the province of Quebec is small. The people that these locating agents are dealing with principally are the English speaking people and we are placing most of them in Ontario.

Q. Have the results been satisfactory with these locating agents?

A. I think so, very satisfactory.

Q. You seem to have had a great many who have defrauded the department?

A. I would not call it defrauding.

Q. At least a fair proportion of them have?

A. When we first started the system of distributing these men in that way, some of the locating agents being farmers did not understand the regulations of the department very thoroughly. The department has not lost any money through any of them.

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By Mr. Monk:

Q. Do you think, Mr. Scott, that you will be able soon to place the two items of information for which I asked you, before the secretary of the committee?

A. Certainly. I can get it ready today I think.

Mr. MONK.—Because the Immigration Bill may be up very soon for consideration.

By Mr. Verville:

Q. Will you tell us the number of immigrants that bonuses were paid on that did not settle on the land?

A. I could not tell you that, there is no possibility of following every individual immigrant.

Q. Could you not even give a percentage?

A. We know the number who took up homesteads.

Q. But of the total number of men that bonuses were paid on you cannot give the percentage that did not settle on the land?

A. There were a greater number that took up homesteads which is pretty good evidence that they were agriculturists that we paid bonuses on.

Q. Is the government aware that at the very least 50 per cent of the immigrants upon whom bonuses were paid did not stay on the land but went to the States?

A. I have never heard that said.

Q. Do you know that the Salvation Army stated that?

A. I do not know.

By Mr. Monk:

Q. I forgot to ask you how it is that the United States get a record of those who have immigrated to the United States leave the country. In our country where we pay a bonus in some specified cases we have no means of tracing the immigrant. He can pass from here, and as a matter of fact has often done so, into the United States and so we have paid a bonus on a man who, if he is a desirable man, has gone to increase the population of the adjoining republic?

A. The United States government reports such men to us and we make a deduction for them out of the next bonus due the booking agent.

Q. Is the account carefully kept?

A. Very carefully.

Q. You get it from Montreal?

A. Get it from Montreal. Under the new Act we propose that the transportation company should file with us an outward bound manifest the same as the United States. We propose as soon as we can to get statistics of outbound passengers as well as incoming people.

Q. How often do you get that statement from the Montreal office of the United States Immigration Department?

A. Once a month.

Q. Would you mind submitting to the committee the three last statements that you have received?

A. Certainly not.

DETENTION OF SICK IMMIGRANTS.

By Mr. McIntyre (Strathcona):

Q. I would like to ask a question regarding the detention of sick immigrants at the port of landing. It has been represented to me that when a sick immigrant goes into the detention hospital, or other hospital, the transportation company takes the

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funds of that man as a guarantee against their having to pay for his expenses during the period of detention?

A. Yes.

Q. Do you think that is exactly fair to the immigrant?

A. An immigrant landing at an ocean port and found to be afflicted with some contagious disease which in the opinion of our doctors is curable is placed in the detention hospital. We do not handle any of the effects of that immigrant at all. It is a matter between the transportation company and their passenger and they either arrange with the passenger themselves or telegraph to his friends for funds the cost during detention being at the rate of 75 cents a day, which includes treatment.

Q. Has any statement been made to you as to what these steamship companies charge?

A. They only charge 75 cents a day.

Q. Have you any means of knowing that these immigrants get a square deal, so to speak, in that particular?

A. I think so.

Q. You have no statement to that effect?

A. The transportation company simply pay the 75 cents a day, we charge the immigrant. I don't think they collect anything further from him. I have known of cases where the immigrant was deported, or debarred as it were. If he had a ticket through, we will say, to Winnipeg from Quebec the transportation company would take that ticket up and cash it and charge the man for his return passage.

Q. Here is a point that I cannot understand: what authority would any transportation company have to take the funds of a sick man and dispose of them as they see fit?

A. It is a matter between the transportation company and their passengers.

Q. But the passenger is in a condition where, it seems to me, he is helpless?

A. What you mean is that they should not take his money at all.

Q. I doubt very much if any passenger could assert his rights under such conditions?

A. Well, he would be returned.

Q. I think myself there should be some precaution for the protection of the immigrant in that instance, there should be some arbiter of some kind to see that the immigrant is not overcharged?

A. I don't think that our officers would sanction any overcharge if they knew it.

By Mr. Verville:

Q. How much time is required to get a report as to an immigrant upon whom a bonus is paid?

A. No time at all.

Q. That is done as quickly as he arrives?

A. Yes.

Mr. VERVILLE.—You only have his word that he goes on the land.

By Mr. Lake:

Q. How do you calculate the number of immigrants that come from the United States?

A. We have inspectors at the international boundary.

Q. Any man who calls himself an immigrant is counted as being one, is that the case?

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A. We ask them certain questions as to whether they were in Canada before and intend to remain in this country. Of course, if a man wants to leave you cannot prevent that.

Q. I understood you to say that your agents give a certificate which entitles a man to a special reduction of railway fare?

A. Yes.

Q. Have you any reason to believe that reduction is taken advantage of by men who have returned to the United States?

A. They issue return tickets as well, and an honest man may be living in the States to-day and come up and make a location and then move in within a year.

Q. I am speaking of the man who has settled in Canada and returned to his former home in the United States. Do you find there are instances in which that man comes back again, once, twice or three times, and each time is counted as an immigrant?

A. No.

Q. You have never heard of any such case as that?

A. They are all asked the question have they ever been in Canada before.

Q. And they always say no.

A. Well, I do not know; I think the bulk of the people are truthful.

Q. Can you tell me where the bulk of the agricultural immigrants are going in the Northwest?

A. I think the number is evenly divided between Saskatchewan and Alberta. I think, of course, a certain number will settle in Manitoba, but the great movement is to Alberta and Saskatchewan.

Q. What parts of Alberta and Saskatchewan?

A. Scattered pretty much over the whole province in each case, southern Alberta has certainly got a very large number of people.

Q. But Saskatchewan in your opinion is getting this year just as many?

A. Just about the same number.

Q. Scattered generally over the whole province?

A. Scattered generally over the province.

Q. Do your agents advise the immigrant as to what part he should go to?

A. Which agents do you mean?

Q. The location agent or some person of that sort?

A. The land guides?

Q. The locating agents, did you not speak of locating agents?

A. We have land guides scattered all through.

Q. I am speaking more of the first agent with whom the immigrants come in contact after getting into the country?

A. I think they generally advise them as to the different districts and let them hunt for themselves.

Q. They simply advise the immigrants as to the different districts? What would be the guiding principle with the agent in regard to that matter?

A. All our agents know the country. I suppose the man living in Saskatchewan would naturally advise settling in that province as the best part of the world. A man living in Alberta would no doubt do the same as far as that province is concerned.

Q. In regard to Saskatchewan you have no reason to believe that your agents are in the habit of directing immigrants to certain particular districts in which they are interested?

A. No, I have never heard of that.

Q. You never heard of that?

A. No.

By Mr. Sharpe (Lisgar):

Q. How many agents have you in the United States?

A. Twenty-four or twenty-five State agents.

Q. Have they any assistants?

A. They have clerks.

By Mr. Verville:

Q. They are supposed to make a report weekly.

A. Yes.

Q. Do they do it?

A. Yes.

By Mr. Lake:

Q. In regard to immigration from the United States, do you find that the immigrants are going mainly into parts where Americans are already settled?

A. No. They are going wherever there are free lands.

Q. How do you account for the falling off in the immigration last year?

A. Well, the United States immigration did not fall off at all. The large falling off of 44 per cent was mainly from Great Britain.

Q. Is there any reason for that?

A. We cut off entirely all assisted emigration and we have adopted regulations which make it difficult for them to emigrate.

Q. You do not think any of the falling off was due to crop failure?

A. The financial conditions in the country may have had something to do with it.

Q. The fact that there was a poor crop has not had anything to do with it?

A. I do not think it affected emigration. It did not affect it in the United States.

Q. You think your regulations affected it?

A. Yes, I think they had some effect.

By Mr. Molloy:

Q. Have you a system of boundary inspection similar to that adopted by the United States boundary inspectors?

A. Very much the same. We have boundary inspection at 107 points. We have 175 officers along the international boundary. During the last year we debarred at the international boundary 4,580 people from entering and we debarred at ocean ports 509.

Q. What are the duties of Mr. Adamson of the Immigration Department, Winnipeg? I understand from a conversation with him that it was part of his duty to advise incoming settlers as to the best localities to settle in?

A. I could not say. I know he is in Winnipeg.

By Mr. Sharpe (Lisgar):

Q. Have you had any complaints of your agents in the United States working in with land companies operating on this side?

A. Of our agents working in with them?

Q. Yes?

A. Yes, I have heard so.

Q. Have you received any complaints?

A. I think possibly no written complaints. I have heard people say they were working in with them.

APPENDIX No. 2

Q. Have you inquired into the truth of any complaints of that nature?

A. No, I have never inquired into them.

Q. Is it not a fact that every one of them works in with land operators on this side?

A. I could not say.

Q. You do not know.

A. I do not.

Q. Do you not consider it is a question which ought to be looked into?

A. I know that when a man writes to my office and wants to know where he can purchase lands in the west, I refer him to the Canadian Pacific Railway, the Canadian Northern Railway and the Hudson's Bay Company, the three large companies that are interested.

Q. Do you not think your agents ought to do the same thing?

A. I suppose they do as far as I know.

By Mr. Sharpe (Lisgar):

Q. By what authority do these immigration agents go around in the manner in which they do? For instance on the Pembina Branch of the Canadian Pacific Railway in Manitoba there is a man travelling up and down all the time wanting to know where the people are going and all about them?

A. That is an arrangement made between the United States and the Canadian Pacific Railway.

Q. The government had nothing to do with it?

A. Absolutely nothing. The position taken by the United States government is that as the Pembina line is close to the international boundary, undesirable people wanting to go into the United States could leave Canada in that way if there was no officer, and just walk across the line. It is a matter for their own protection.

Q. Do you think that the fact of that man being on that line is any guard against that?

A. Well, he sees who is going along the line.

By Mr. Lake:

Q. Have you found any of our immigrants going out of the country?

A. They go out every day.

Q. To any very great extent?

A. Not to any very great extent.

Q. Have you any idea as to the number?

A. No, I have not.

Q. You do not check the numbers?

A. We do not get the passengers outward bound.

By Mr. Wilson (Lennox and Addington):

Q. Is it not your attention at an early day to gather that information?

A. Our intention is as soon as possible to collect the statistics of outbound people.

Q. I know that the United States keeps those records and although they had nearly a million immigrants last year the net increase of alien population was a little over 209,867.

GOVERNMENT EMPLOYMENT AGENTS.

Q. I want to ask you about these letters you sent out to Mr. Miller and the other people. When you got the answers who opened the letters?

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A. They were opened in my office.

Q. By yourself?

A. Not necessarily.

Q. But you understood their contents?

A. Which letters?

Q. I mean the one, for instance, about Spinks, which I read at the last meeting?

A. I don't see all the correspondence.

Q. You do not see any?

A. I did not say that. I said I do not see all the correspondence.

Q. But when a letter came in with reference to Mr. Miller reporting that he had located a man, Mr. Spinks, and you wrote and found from the man he was located with, that Spinks was not a farmer, the man he was located with was not a farmer, and that Mr. Miller did not locate him although he reported that he did, what have you to say to that?

A. He was to be paid as a farm labourer.

Q. Was not your attention called to these facts?

A. I could not say.

Q. Well, cannot you get us that information?

A. I do not know whether I could get it. I have correspondence amounting to between 650 and 700 letters a day. It is impossible for me to see them all.

Q. It is a very important matter, that agents should be reporting falsely to the department and you, who are the head of the department, should know nothing about it?

A. I did not say that.

Q. You did not give us any information about it?

A. I know all about it.

Q. Then what do you say?

A. I know all about it.

Q. Then tell us about that. What is done with these letters when they come in?

A. They are put on the file.

Q. Then, what action is taken?

A. They are acted upon.

Q. Mr. Miller reported on this man Spinks, I could not give you the exact date, but some time in 1907. You wrote Mr. Dennison in February, 1908, and you got his answer on the 8th February, at least the letter was dated then. Yet you kept Mr. Miller in the employ of the government for about a year after that?

A. Yes.

Q. Did you take any notice of the answer that was sent to you?

A. I could not answer that.

Q. How are we to know what action was taken?

A. All the correspondence is on the file and copies have been brought down.

Q. We are practical men and we would like you to give us the information. I asked you the last time you were here to give us all the information about Mr. Miller's dealings with this man and you do not seem to have it?

A. I gave you all the information at the last meeting.

Q. You gave us some information but you did not give us anything as to who opened these letters or if they were brought to your attention or whether the Minister was notified of their contents?

A. And I say that I get 6 or 7 hundred letters a day.

Q. I know but these are important letters. When an agent of yours goes wrong some important officer in the Department should be notified of it, the attention of the Minister or Superintendent of Immigration should be called to it? Is not that right?

A. Certainly.

APPENDIX No. 2

Q. Evidently for a year after that report was made Mr. Miller was still conducting affairs as agent?

A. Yes.

Q. And no notice was taken of his conduct? Is that a common thing?

A. I apparently made an error. That apparently was not drawn to my attention and I might have made an error.

Q. That is all right if it is an error. I don't see why that should not be reported to the Minister and action taken?

A. Well Mr. Miller has been dismissed.

Q. But that is not sufficient? Did you ever know of a thief caught in the act that would not give up the plunder?

A. If you write me a letter, Mr. Wilson, making complaint I will lay it before the Minister.

Q. It is a little amusing to me to have the Chief Officer of a Department when a matter such as this set forth in documents in his own office is brought to his attention refusing to take action until he is notified by a private citizen. Is that not a little too thin, Mr. Scott? I think it is. Why did you not do to Mr. Miller what you did with Mr. Waugh? You admitted in your testimony when you last appeared before us that you reported Mr. Waugh to the Minister and I think to the Justice Department. Now this is a similar case. It is true that Mr. Waugh took more money and had to refund it but his case is identical almost with that of Mr. Miller. Now what excuse do you give for the difference of action in these two cases?

A. I am not making any excuse at all.

Q. You ought to make some explanation?

A. I am not going to make any excuse.

Q. I am not asking you for an excuse, but an explanation?

A. The reason I do not make any excuse is that I do not think that Mr. Miller did anything intentionally wrong.

Q. You do not?

A. No, I do not think that he understood the regulations thoroughly.

Q. You do not think that he did anything intentionally wrong?

A. Also that the department did not lose anything.

Q. Although Mr. Miller reported to you that he had located the man and yet he did not have anything to do with locating him; although the men that Mr. Miller alleged he located Spinks with, denied Miller's story; although he says that he agreed with that man that Spinks should get \$25 a month, and all that is false, you do not think there is anything wrong about it?

A. I did not say that.

Q. Yes, you said it?

A. Intentionally wrong is what I said.

Q. Well you think he did not do anything intentionally wrong?

A. I think he did not understand the regulations.

Q. It is so plain that I think a fool could not err therein. It seems to me that it is just as plain as daylight. We have the documentary evidence, and the facts are given in the testimony taken at our last meeting, and yet you say that Mr. Miller did not intentionally do anything wrong. What do you call it if a man deliberately reports that he has located a certain man and has nothing of the kind? There is the evidence of two persons that Mr. Miller had nothing whatever to do with the location of this man. Then he says he located a man with Mr. Deschene, who is a section boss on the Grand Trunk Railway. This man never worked at farming, he worked on the railroad with Mr. Deschene. Still Mr. Miller reported that he had located this man with a farmer and was paid \$4 for doing it. He got \$18 for locating Mr. Spinks and his wife and seven children, and still you say he did not do anything wrong intentionally. There are several other cases. What about Mr.

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Jones? It was reported that certain parties were located with him but Mr. Jones writes to you direct saying that he did not ever have these people with him. Still you say that you do not think Mr. Miller intentionally did anything wrong?

A. I do not think he did.

Mr. WILSON (Lennox and Addington).—It is astonishing the faith that some people have, I have not found such faith anywhere else.

By Mr. Wilson (Laval):

Q. Does the Immigration Act define the meaning of the word 'farmer' or what constitutes a farmer?

A. I think not.

Mr. WILSON (Laval).—I would ask my honourable friend from Lennox this question: supposing a man that owned an acre of land in a village and carried on gardening for himself were to ask for an immigrant to be sent to him and the immigrant were to be located on that little piece of land, would that be farming?

Mr. WILSON (Lennox and Addington).—Can you cite a case.

Mr. WILSON (Laval).—I can cite my own case. You will see that these definitions are quite nice sometimes. I have got 3 acres of land. Supposing that I were to apply to the department for a farmhand and the agent located an immigrant on my place. Would that be wrong or would it be right? I might say that I am a lawyer by profession.

Mr. WILSON (Lennox and Addington).—All I have to say is that the conditions cited do not exist in any of the cases that I have reference to. I am giving definite cases and the witness still persists in saying that the offender did not know that he was intentionally doing wrong.

Mr. WILSON (Laval).—Supposing a farmer having three or four hundred acres of land asks the immigration officers for a farm hand and then uses that farm hand for a coachman. I would like to know from my honourable friend whether this would be infringing the law or not, or whether the locator would commit a crime by reporting to Mr. Scott; in other words whether that would be a good location or not. This is the reason I brought up the question of definition, as to whether there should not be in the Bill some definition of the word 'farmer,' the word 'location,' and of the duties of an agent.

Mr. WILSON (Lennox and Addington).—There is a clause in the instructions which each locating agent gets, prohibiting him even to help to locate any person other than farm labourers or domestic servants. Is that not right, Mr. Scott?

The WITNESS.—Yes.

Mr. WILSON (Laval).—What is a domestic servant or what is a farm hand, what is a farm and what is a farmer? These things should be defined in order to avoid any errors in future that would reflect on the honour of the citizens of this country. We are forcing an immigration agent to be a little more acute even than a judge of the Superior Court whose judgment might be reversed in the Court of Appeal and more particularly when we are dealing with a new Act. You musn't play with crime, it is too serious.

By Mr. Lake:

Q. I would like to ask Mr. Scott a question in connection with what we were discussing just now. I understand from you, Mr. Scott, that you know of no cases in

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which your agents are working in with land companies or are directing immigrants to certain particular districts where they are interested in lands themselves?

A. No.

Q. I had a letter the other day from a man who claimed that one of your agents at Winnipeg, some man employed in the Immigration Office, had sent him to a certain district with a letter to the agent's son and that he had bought land from this man and then found that it had not been patented?

A. If you will send me the letter I will have the complaint investigated.

Q. I will send it to you. Have you had no other complaints at all of that nature?

A. I cannot recall any. I have heard real estate men talking when I have been west and saying that our agents were referring parties to someone else.

Q. I suppose you have issued instructions to your agents that they are to do nothing of the kind?

A. No, I cannot say that I have. These agents were all appointed before I came to the Department. I do not remember exactly as to that.

By An Honourable Member:

Q. If you did issue instructions you would prohibit the agents from doing anything of that kind?

A. Certainly.

By Mr. Lake:

Q. Have you heard this matter talked of?

A. In Winnipeg I have heard it talked of by real estate men who said they were referring new arrivals to those people.

Q. You have never thought it worth while to give instructions to your agents prohibiting them from doing any thing of the kind notwithstanding the existence of these suspicions?

A. I cannot say that I have. I did not think it was really necessary.

By Mr. Rutan:

Q. Some of these immigrants should undergo an examination before they leave the old country as to their character and qualifications. I know that some of them who have come into our part of the country are really not worth anything. It seems to me that it is a waste of time and money to bring that class of people into Canada. They are really not worth anything; they are lazy, will not work, and are anything but desirable citizens?

A. If the clerk of the municipality to which you refer will make a complaint we will attend to it.

Mr. McCALL.—If a large number of immigrants are brought into the country we must expect that some proportion of them will not turn out well. We should exercise proper care, of course, and get the best. I take the ground that these immigrants from Great Britain, our motherland, are worth bringing here even at the risk of occasionally getting an undesirable one. I take the ground that a man coming here with a family of 5 children has brought to this country an asset of two or three thousand dollars. I think the gentlemen will admit with me that it is cheaper to import them than to raise them here. I have in mind an English family that came into my town, the town of Simcoe, and lived quite near me. They were in need and the members of my family had to look after them. There were 5 sons and 4 daughters. The mother was bright and cheerful, a woman full of courage. The father was no good, absolutely no good. I said to my people, 'You help these people through until they get on their feet.' In time the children got work; some went to

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service and some went on the farm. I figured it out that family was worth \$5,000 to the country. In the same block in which these people lived there were 11 houses in which a child had never been born. So you see we can afford to give the greatest encouragement and assistance to these people who come here with the hope that their condition will be better and they will get new opportunities. Mistakes may be made with these immigrants, but mistakes are made in connection with people raised in the country. We get undesirables in our own country. The only thing is to exercise all possible care. We should make the best possible selection and then improve them when they come. Let us have them, however, because it is worth all it costs to raise the children to an age when they are self-sustaining.

By Mr. Blain:

Q. Do you know anything about the regulations in force between the Ontario Government and the Salvation Army, as to how they compare with the regulations which you have adopted in connection with that organization?

A. I could not say.

Q. What is your agreement or understanding with the Salvation Army?

A. I have promised Mr. Monk to bring down the information.

Witness retired.

Committee adjourned.

Having read over the foregoing transcripts of my evidence I certify the same to be correct.

W. D. SCOTT,
Superintendent of Immigration.

APPENDIX
TO THE
PRECEDING REPORT

INTERIM REPORTS.

FIRST REPORT.

The Select Standing Committee on Agriculture and Colonization present their First Report, as follows:—

The Committee recommend that 20,000 copies of the evidence of each member of the official staff at the Central Experimental Farm who testifies before this Committee in the current Session of Parliament, be printed forthwith, in pamphlet form, in the usual numerical proportions of English and French, as advance sheets of the Committee's final report, and distributed as follows:—

17,600 of each to Members of Parliament, 800 copies of his own evidence be allotted to each member of the said official staff, 1,500 copies to the Department of Agriculture, and 100 copies of each to the use of the Committee.

House of Commons,
March 4, 1909.

SECOND REPORT.

The Select Standing Committee on Agriculture and Colonization present their Second Report, as follows:—

The Committee recommend that 20,000 copies of the evidence of Dr. J. G. Rutherford, Veterinary Director General and Live Stock Commissioner, taken by the Committee in the current Session of Parliament, be printed in pamphlet form forthwith, in the usual numerical proportions of English and French, as advance sheets of the Committee's Final Report, for distribution, as follows:—

16,900 copies to Members of Parliament,
3,000 copies to the Department of Agriculture, and
100 copies for the use of the Committee.

House of Commons,
March 18, 1909.

THIRD REPORT.

The Select Standing Committee on Agriculture and Colonization present their Third Report, as follows:—

The Committee recommend that 20,000 copies of the evidence of Mr. J. A. Ruddick, Dairy and Cold Storage Commissioner, taken by the Committee in the current Session of Parliament, be printed in pamphlet form forthwith, in the usual numerical proportions of English and French, as advance sheets of the Committee's Final Report, for distribution as follows:—

16,900 copies to Members of Parliament.
3,000 copies to the Department of Agriculture.
100 copies to the use of the Committee.

House of Commons,
March 25, 1909.

FOURTH REPORT.

The Select Standing Committee on Agriculture and Colonization present their Fourth Report, as follows:—

The Committee recommend that 40,000 copies of the evidence of Mr. A. McNeill, Chief of the Fruit Division, Department of Agriculture, taken by the Committee in the current Session of Parliament, be printed in pamphlet form forthwith, as advance sheets of the Committee's Final Report, in the usual numerical proportions of English and French, for distribution as follows:—

36,800 to Members of Parliament.

3,000 to Department of Agriculture.

200 to the Committee.

House of Commons,

April 15, 1909.

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